

STANDARD OF COVERAGE



FRESNO FIRE DEPARTMENT
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EXECUTIVE SUMMARY

One of the major issues the fire service has struggled with in the past has been defining the levels of service for the community it serves. As part of the Commission on Fire Accreditation process, a standard of coverage document has to be developed and adopted by the agency having jurisdiction. As the Fresno Fire Department proceeded to establish its service level objectives, it did so based on the 2025 Public Safety Commission Report. The 2025 report specifically identified needed resources over the next 25 years and was built upon the concept of meeting established service level objectives for the types of emergencies routinely responded to in the city of Fresno. This document is designed to provide elected officials and residents with information on fire service operations and integrated risk management planning. It is not intended to be a stand-alone document but to be used in conjunction with the Fire Department five-year strategic plan.

RISK ASSESSMENT METHODOLOGY

The city must assess risks based upon the potential frequency (probability of occurring) and the potential damage should it even occur. For example, a terrorist act has a low probability; however, if a terrorist act occurs, the damage and the psychological impact are potentially very high. This same outlook regarding risk assessment can also be applied to natural disasters. For example, an earthquake generally does not hit the same communities every year; but, if it does strike, the damage can be great. Conversely, medical emergencies happen every day. The overall potential damage from medical emergencies to the community as a whole is not nearly as significant as that from an earthquake or other natural disaster (though these individual incidents greatly affect those requiring the service). Organizations must be able to compare the potential frequency and potential damage of events that may affect your community. Communities of all sizes need to conduct this type of analysis.

Risk management is the analysis of the chance of an event occurring and the damage that could result as from the event.

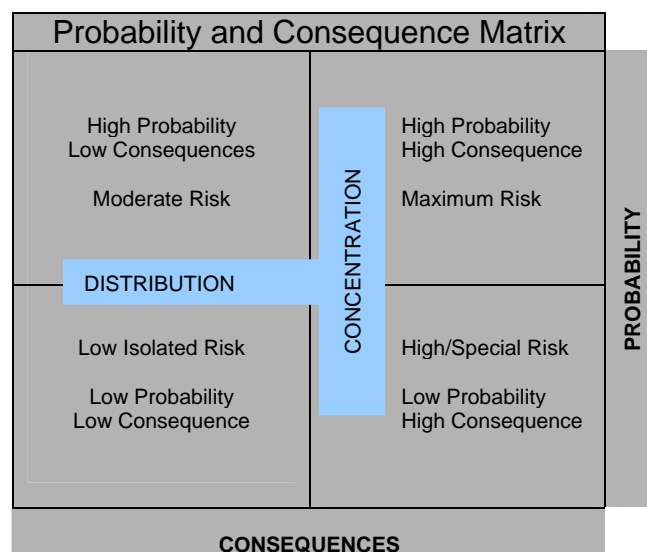
Probability Matrix	
High Probability Low Consequence	High Probability High Consequence
Low Probability Low Consequence	Low Probability High Consequence

For example: structure fires are relatively infrequent in comparison to medical incidents in the city; however, the subsequent dollar loss, loss of irreplaceable items, and loss of business or jobs make the consequences of such fires high; activation of automatic fire alarms is high probability with low consequence; earthquakes or a large hazmat incident may be infrequent but represent a large potential loss to life and property. Comparatively, a dumpster fire may be high probability but have little consequence outside of the fire response. With an understanding of the different levels of probability and consequences, proper strategic planning in respect to risk management, and resource deployment can take place.

The challenge in community risk management does not lie solely in the work necessary to assess the probabilities of an emergency event in a community, but in the political arena as well. As with so much of what is done for emergency response, it is the policymakers who will determine the level of service to be delivered to the city.

COMMUNITY RISK ASSESSMENT–FIRE SUPPRESSION

The evaluation of fire risks must take into account the frequency and severity of fires and other significant incidents. Determining risk by analyzing the real world factors in the service area is essential to the development of a workable five-year fire department strategic plan. The risk assessment divided into four quadrants imposes different requirements for commitment of resources in each area.



The relationships between probability and consequence and the community's adopted service level objectives determine the needed concentration and distribution of resources. Distribution is the number of resources placed throughout the city. Concentration is the number of resources needed in a given city area. This varies

depending on many factors including the number of events (calls) for service; the risk factors of the area; the availability, reliability, and time of arrival of secondary responding units; etc. A challenge for the city will be to fund the proper balance for the distribution and concentration of resources needed as identified in the 2025 Public Safety report to meet the service level objectives.

STANDARD OF COVERAGE: INTEGRATED RISK MANAGEMENT PLANNING

A critical element in the assessment of any emergency service delivery system is the ability to provide adequate resources for anticipated fire combat situations, medical emergencies, and other anticipated events. Each emergency requires a variable amount of staffing and resources to be effective. Properly trained and equipped fire companies must arrive, deploy, and mitigate the event within specific timeframes if successful emergency event strategies and tactical objectives are to be met. Each event, fire, rescue operation, major medical emergency, disaster response, and other situations will require varying and unique levels of resources. For example, controlling a fire before it has reached its maximum intensity requires a rapid deployment of personnel and equipment in a given timeframe. The higher the risk, the more resources needed. More resources are required for the rescue of persons trapped within a high-risk building with a high-occupant load, than for a low-risk building with a low-occupant load. More resources are required to control fires in large, heavily loaded structures than in small buildings with limited contents. Creating a level of service requires making decisions regarding the distribution and concentration of resources in relation to the potential demand placed upon them by the level of risk in the community. Each quadrant of the chart creates different requirements in the community for the commitment of resources.

The objective is to have a **distribution** of resources that is able to reach a majority of events in the timeframe identified in the service level objectives. There are many factors that make up the risk level, which would indicate the need for higher concentration of resources:

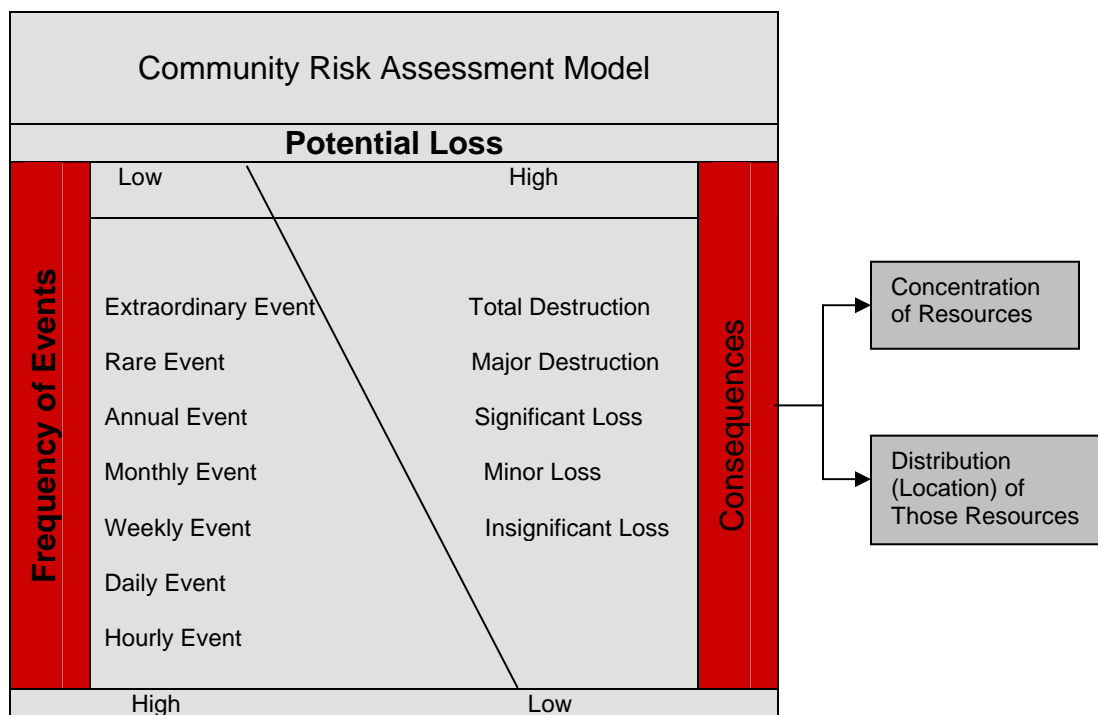
- Inability of occupants to take self-preserving actions
- Construction features
- Lack of built-in fire protection
- Hazardous structures
- Lack of needed fire flow
- Nature of the occupancy or its contents, etc.

Evaluation of such factors lead to the number of personnel needed to conduct the critical tasks necessary to contain the event in an acceptable timeframe. While all risk factors have some common thread, the rationale of placing an occupancy within any risk assessment category is to assume the worst for structural protection. Fire flow is

one such factor used as a risk assessment criterion or requirement, which is based on defining the problem that will occur if the occupancy is totally involved, creating the maximum demand upon fire suppression services. The level of service provided by an agency should be based on the agency's ability to cope with various types and sizes of emergencies that the agency can reasonably expect after conducting a risk assessment. This process starts with examining the most common community risk, the potential fire problem, target hazards, critical infrastructure, and of historic call data review.

RISK ASSESSMENT MODEL

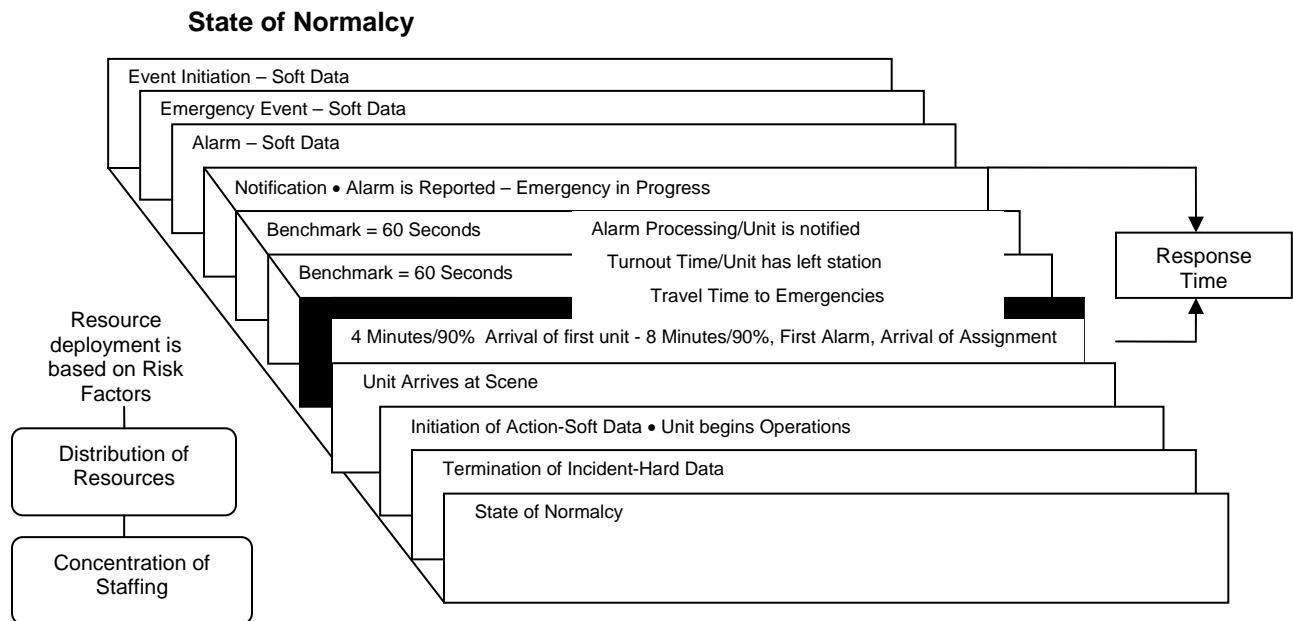
The risk assessment model incorporates the various elements of risk to the relationship among the community as a whole, the frequency of events that occur, the severity of potential losses, and the usual distribution of risks. Overall, the city is likely to have a wide range of potential risks; and, yes, there will be an inverse relationship between risk and frequency. The daily event is usually the routine that results in minimal losses, while significant events are less frequent. Toward the highest risk levels on the chart, the events are less frequent. If the risk management system is working in the community, a catastrophic loss should be an extraordinary event. The objective of a risk assessment is to reduce the truly serious loss to a very unusual event for the city and involves trying to keep routine emergencies from becoming serious loss situations. This is accomplished only when a comprehensive standard of coverage integrated risk management plan has been developed, which provides the necessary resources for those risks identified within the city and the other service areas.



THE CASCADE OF EVENTS

In every emergency there is a sequence of events that are critical elements in respect to time and evaluation of the response system, known as the cascade of events and it occurs on every emergency call.

Cascade of Events Associated with Emergency Operations



The response performance continuum is composed of the following:

Event Initiation Point—The point at which factors occur that may ultimately result in activation of the emergency response system. Precipitating factors can occur seconds, minutes, hours, or even days before the point of awareness is reached. An example is the patient who ignores chest discomfort for days until it reaches a critical point at which time he/she makes the decision to seek assistance.

Emergency Event Awareness—The point at which a human being or technologic sentinel (i.e., smoke alarm, infrared heat detector, etc.) becomes aware that conditions exist requiring activation of the emergency response system.

Alarm—The point at which awareness triggers notification of the emergency response system. An example of this time point is the transmittal of a local or central alarm to a public safety answering point (PSAP). Again, it is difficult to determine the time interval during which this process occurs with any degree of reliability. The alarm transmission interval lies between the awareness point and the alarm point. This interval can be significant, as when the alarm is transmitted to a distant commercial alarm monitoring organization, which then retransmits the alarm to the local 9-1-1 dispatch center. When there is an automatic transmission of the signal, the fire department gains valuable time

in controlling the event. Another example of this situation occurs in many jurisdictions when 9-1-1 is called from a cell phone, which often goes to a central answering point and is then rerouted to the appropriate dispatch center.

Notification—The point at which an alarm is received by the PSAP. This transmittal may take the form of electronic or mechanical notification received and answered by the PSAP.

Alarm Processing Time—The time between the first ring of the 9-1-1 telephone at the dispatch center and the time the computer-aided dispatch (CAD) operator activates the station and/or company alerting devices.

Turnout Time—The interval between the activation of station and/or company alerting devices and the time when the responding crew is aboard the apparatus and the apparatus is beginning to roll toward the call as noted by the mobile computer terminal or notifies dispatch by voice that the company is responding. During the reflex interval, crews cease other activities, don appropriate protective clothing, determine the location of the call, and board and start the fire apparatus.

Travel Time—The point at which the responding apparatus signals the dispatch center that they are responding to the alarm and ends when the responding unit notifies the dispatcher of its arrival on scene (via voice or mobile computer terminal notification).

On-Scene Time—The point at which the responding unit arrives on the scene of the emergency.

Initiation of Action—The point at which operations to mitigate the event begin. This may include size-up, resource deployment, and patient intervention.

Termination of Incident—The point at which units have completed the assignment and are available to respond to another request for service.

Total Response Time—Alarm processing time plus turnout time plus travel time.

FRESNO FIRE DEPARTMENT 2005 STATISTICS

Calendar Year 2005 Incident and Fire Loss Statistics		
Total Calls (within Fresno city)		32,271
Fires	2,337	
Single-Family Structure Fire	278	
Multi-Family Structure Fire	178	
Commercial Fire	240	
Fires in Mobile Property Used as a Fixed Structure	20	
Vehicle Fires	510	
Natural Vegetation Fires	333	
Outside Rubbish Fires	573	
Special Outside Fires	71	
Cultivated Vegetation Fires	11	
Fire, Other	123	
Overpressure Rupture, Explosion, Overheat (No Fire)	83	
Rescue and Emergency Service Incidents	21,970	
Hazardous Conditions	664	
Service Calls	874	
Good Intent Calls	3,604	
False Alarm Calls	2,362	
Severe Weather and Natural Disaster	15	
Other Types of Situations Found	362	
Automatic Aid Calls (outside Fresno city) (These calls are not counted in total calls listed above; they are counted by the department having jurisdiction)		784
Automatic Aid Calls (into Fresno city) (These calls are included in the total fire calls listed above)	929	
Total Fire Loss		\$16,049,425
Single-Family Structure	\$7,163,990	
Multi-Family Structure	5,728,000	
Commercial Structure	2,184,970	
Mobile Property Used as Fixed Structure	370,950	
Vehicle	590,315	
Natural Vegetation	0	
Outside Rubbish	50	
Special Outside	9,650	
Cultivated Vegetation	0	
Fire, Other	1,500	
Total Arson Calls (Included in total fire calls listed above)	562	
Single-Family	25	
Multi-Family	28	
Commercial	68	
Vehicle	106	
Others (including landscaping, trash, etc.)	335	
Total Arson Loss (Included in total fire loss listed above)	\$1,083,255	
Single-Family	\$194,125	
Multi-Family	196,200	
Commercial	490,230	
Vehicle	189,600	
Other (including landscaping, trash, etc.)	13,100	
Number of Civilian Injuries		45
Number of Civilian Fatalities		5

EVALUATING FIRE SUPPRESSION CAPABILITIES

Firefighters encounter a wide variety of conditions at each fire. Some fires will be at an early stage and others may have already spread throughout the building. This variation in conditions complicates attempts to compare fire department capability. A common reference point must be used so that the comparisons are made under equal conditions. In the area of fire suppression, service-level objectives are intended to prevent the flashover point, a particular point of a fire's growth that makes a significant shift in its threat to life and property. Fire suppression tasks required at a typical fire scene can vary a great deal. What fire companies must do, simultaneously and quickly, if they are to save lives and limit property damage, is to arrive within a short period of time with adequate resources to do the job. Matching the arrival of resources within a specific time period is the objective of developing a comprehensive standard of coverage integrated risk management plan.

The Stages of Fire Growth

Virtually all structure fires progress through a series of identifiable stages.

- Stage 1: The Ignition Stage—The ignition of a fuel source takes place. Ignition may be caused by any number of factors, from natural occurrences such as lightning to premeditated arson.
- Stage 2: The Flame Stage—The fuel initially ignited is consumed. If the fire is not terminated in this stage, the fire will progress to the smoldering stage or go directly to flashover.
- Stage 3: The Smoldering Stage—The fuel continues to heat until enough heat is generated for actual flames to become visible. It is during this stage that large volumes of smoke are produced and most fire deaths occur. Temperatures rise throughout this stage to over 1,000 degrees Fahrenheit in confined spaces, creating the hazard of "back draft" or smoke explosion. This stage can vary in time from a few minutes to several hours. When sufficient oxygen is present, the fire will progress to the free-burning phase.
- Stage 4: Free Burning or "Flashover" Stage—The fire becomes free burning and continues to burn until the fire has consumed all contents of the room of fire origin, including furnishings, wall and floor coverings, and other combustible contents. Research into the flashover phenomenon has yielded criteria that precisely measure when flashover occurs; however, any exact scientific measurement in the field is extremely difficult. Observable events that would indicate a flashover are "total room involvement" and "free burning." These indicators are easily observable by firefighting personnel and the public and can be easily recorded and retrieved for future evaluation. Both scientific tests and field observations have shown when flashover is experienced, it has

a direct impact on fire protection and the ability of the emergency services system.

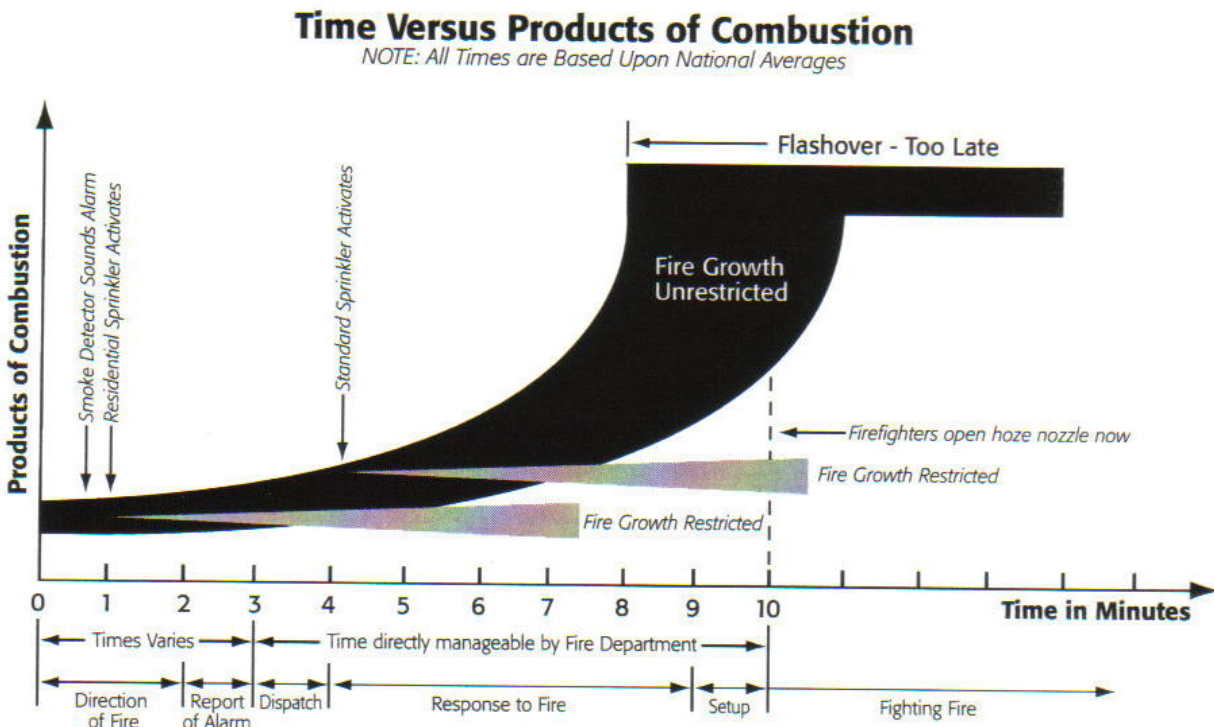
- a. Flashover occurs at a temperature between 1,000 and 1,200 degrees Fahrenheit. These temperatures are well above the ignition points of all common combustibles in residences, businesses, and industries. When this temperature range is reached, all combustibles are immediately ignited. Human survival after this point is highly improbable without specialized protective equipment.
- b. At the point of flashover, lethal fire gases (such as carbon monoxide, hydrogen sulfide, and cyanide) increase explosively. People exposed to these gases, even when not directly exposed to the fire, have drastically reduced chances of survival.
- c. Flashover can occur within a relatively short period of time. Precisely controlled scientific tests indicate that flashover can occur in as little as two minutes from the flame stage. On the other hand, field observations of actual fires indicate that total room involvement can take as long as 20 minutes or more. There is no way to ascertain the time to flashover since it is not possible to determine when a fire started. Nevertheless, a correlation can be drawn between flashover and the entire fire protection system.

As suggested previously, the number of times that fires are controlled before flashover depends on the entire fire protection system and is not solely dependent on emergency response forces. Built-in fire protection, public education, extinguishment by citizens, and even the consumption of fuel by the fire are all factors that affect flashover. Even when fires are not extinguished by firefighting forces, these personnel often provide other services, ranging from smoke removal to the restoration of built-in fire control systems. The objective is that all components of the fire protection system, from public education to built-in fire protection to manual fire suppression, must be maintained and the performance of each evaluated.

Flashover is a critical stage of fire growth, as it creates a quantum jump in the rate of combustion and a significantly greater amount of water is needed to reduce the burning material below its ignition temperature. A fire that has reached flashover often indicates it is too late to save anyone in the room of origin, and a greater number of firefighters are required to handle the larger hose streams needed to extinguish the fire. A post-flashover fire burns hotter and moves faster, compounding the search-and-rescue problems in the remainder of the structure at the same time more firefighters are needed for fire attack.

The Significance of Flashover

Pre-Flashover	Post-Flashover
Limited to one room	May spread beyond one room
Requires smaller attack line	Requires larger, more attack lines
Search and rescue is easier	Compounds search and rescue
Initial assignment can handle	Requires additional companies



Staffing and equipment needs can be reasonably predicted for different risk levels and fire stages. The correlation of staffing and equipment needs with fires according to their stage of growth is the basis for response coverage. The goal is to maintain and strategically locate enough firefighters and equipment so that a minimum acceptable response force can reach a reasonable number of fire scenes before flashover and intercede in critical medical emergencies. The “Four Minutes to Excellence” theme and the 2025 Public Safety report are built upon this concept.

SCENE OPERATIONS

The combination of property and life risk determines the fire ground tasks that must be accomplished to minimize loss. These factors, although interrelated, can be separated into two basic types: fire flow and life safety. Fire flow tasks are related to getting water on the fire; life safety tasks are related to finding injured/ill persons and providing definitive emergency medical care, or trapped victims and removing them from the building. The required fire flow is based on a building's:

- ▶ size
- ▶ structural material
- ▶ distance from other buildings
- ▶ horizontal and vertical openness (lack of partitions)
- ▶ contents
 - type
 - density
 - potential energy (BTUs per pound)

Life-safety tasks are based upon the number of patients in an emergency medical incident or occupants in a fire situation: their location (e.g., a low-rise versus high-rise), their status (awake versus sleep), and their ability to take self-preservation action. For example, ambulatory adults need less assistance than non-ambulatory. The elderly and small children always require more assistance. The key to the fire department's success at an emergency incident is coordinated teamwork, regardless of whether the tasks are all fire-flow related or a combination of fire flow rescue and life safety. A fire in an occupied residential single- or multi-family structure requires a minimum of eight tasks to be simultaneously conducted in order to stop the loss of civilian lives, stop further property loss, and minimize the risks to the firefighter. The number of type of tasks needing simultaneous action will dictate the minimum number of firefighters needed at different types of emergencies. The following table is an example of these tasks, which usually are performed simultaneously in the majority of fire responses to the most prevalent risk: single- and multi-family dwellings. These tasks usually occur within the first 5-15 minutes of fire ground operations.

If the city desires a successful outcome at an incident, it must provide sufficient numbers of resources at a proper time and in a proper order. Resources are staffed engine companies, truck companies, and related emergency scene support. If a

community does not care that all fires are successfully extinguished or events mitigated in a successful way, it will provide insufficient resources. The outcome will follow this decision-making method.

Minimum Tasks Necessary at a 2,000 Square-Foot Residential Structure Fire		
Number		
Task	Firefighters	Company Assigned
Attack Line	2	1st Engine
Rapid Intervention Team	2	Truck/Engine
Search and Rescue	2	Truck
Ventilation	2	Truck
Back-up Line	2	2nd Engine
Safety Officer	1	Assigned
Pump Operator	1	1st Engine
Aerial Operator (Optional Depending on the Incident)	1	Assigned
Water Supply	1	2nd Engine/WT
Command Officer	1	Battalion Chief
Command Aid (Optional Depending on the Incident)	1	Assigned
Total Personnel	14/16	

WHAT IS AN EFFECTIVE RESPONSE FORCE

An effective response force is defined as the minimum amount of staffing and equipment that must reach a specific emergency within a targeted travel time. It should be able to handle the typical emergency medical incident or fire that is reported shortly after it starts and is within the maximum prescribed travel time for the type of medical emergency or risk level of the structure. Considering that the fire department cannot hold fire or other risks to zero or successfully resuscitate every patient, its response objective should find a balance among effectiveness, efficiency, and reliability that will keep community risk at a reasonable level. At the same time, yield the maximum life and property savings and provide for the safety of the responding firefighters, paramedics, police officers, and other first responders.

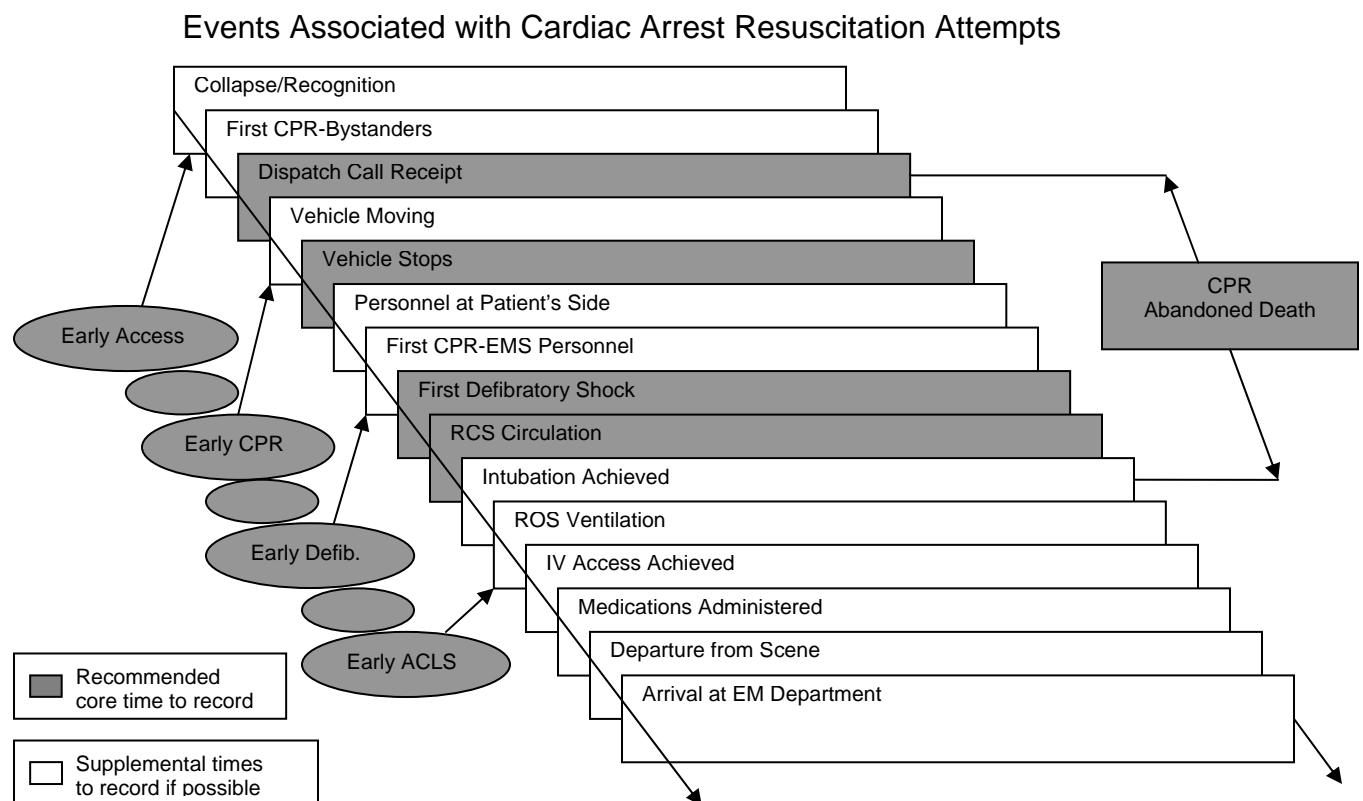
RESPONSE RELIABILITY

Response reliability is defined as the probability that the required amount of staffing and apparatus will be available when a fire or emergency call is received. The response reliability of the fire department would be 100 percent if every piece of its apparatus was available every time an emergency call was received. In reality, there are times when a

call is received for a particular company but the company is already on another call. This requires a substitute (second-due) company to be assigned from another station. As the number of emergency calls per day increases, so does the probability that a needed piece of apparatus will already be busy when a call is received. Consequently, the response reliability of the fire department for that company decreases, which will have an impact on department travel times to emergencies. The size of the area that a station covers, the number of calls, the types of calls, and the population density all affect response reliability. The more densely populated, the more likely a second-due call will occur. An analysis of current response data can reveal variations in the response reliability among stations. The optimal way to track response reliability would be to analyze the total call volume for a particular fire management area and then track the number of double and triple calls to assess what the true response reliability is for that given area and the companies assigned to respond into the area.

EVALUATING EMS CAPABILITIES

From an emergency medical perspective, the service-level objective typically is to provide medical intervention within a six-minute timeframe, as brain damage is very likely at six minutes without oxygen. However, in a cardiac arrest situation, survivability dramatically decreased beyond four minutes without appropriate intervention. The research recommends using the Utstein reporting criteria for outcomes research and capture of the following time stamps/points in the cascade of events in an EMS call that should be tracked.



Early defibrillation is often called the critical link in the chain of survival because it is the only way to successfully treat most sudden cardiac arrests. When cardiac arrest occurs, the heart starts to beat chaotically (fibrillation) and can not pump blood efficiently. Time is critical. If a normal heart rhythm is not restored in minutes, the person will die. In fact, for every minute without defibrillation, the odds of survival drop seven to ten percent. A sudden cardiac arrest victim who is not defibrillated within eight to ten minutes has virtually no chance of survival.

The shortest possible response times create the highest probabilities of resuscitation. An important evaluation point lost on most agencies is the time that crews reach patient side. Often the clock stops when the vehicle arrives or stops at the address. Key to a successful outcome is this last piece of time, which occurs from the moment wheels stop to the point the patient is actually contacted. In high-rise communities or other larger complexes, this time period can be substantial and can most certainly affect the outcome due to delayed intervention.

INSURANCE SERVICE OFFICE (ISO) GRADING SCHEDULE

For a broad spectrum of commercial and personal lines of insurance, ISO provides statistical, actuarial, underwriting, and claims information and analyses; consulting and technical services; policy language; information about specific locations and communities; fraud-identification tools; and data processing. In the United States and around the world, ISO serves insurers, reinsurers, agents, brokers, self-insurers, risk managers, insurance regulators, and other government agencies.

Since the middle of the 19th century, U.S. property insurance companies have funded initiatives aimed at loss prevention and fire mitigation. In the battle against fire losses, one of the industry's more important tools is the Public Protection Classification (PPC™) program administered by ISO. The PPC program evaluates a community's public fire-protection capability and assigns a protection-class rating from 1 to 10. Class 1 represents exemplary fire protection; Class 10 means that the area's fire-suppression program does not meet ISO's minimum criteria.

THE FIRE SUPPRESSION RATING SCHEDULE

In 1980 ISO introduced a new version of the schedule, now known as the *Fire Suppression Rating Schedule* (FSRS), as the basis for the PPC system. The FSRS assigns credit points to recognize a community's performance on measures related to fire suppression. The schedule objectively evaluates each item and uses the evaluations in a mathematical calculation of the amount of credit. Using the FSRS, ISO develops a PPC number for each community. The number represents the average class of fire protection for small to moderate-size buildings; the vast majority of all buildings in nearly all cities. The system compares the average available protection with the average protection needed for such buildings.

The following paragraphs explain the major items considered in a PPC evaluation of a community.

Items 410-414: Telephone Service—The schedule gives credit for each telephone line provided for fire department emergency and business service, up to the number needed. The number of lines needed depends upon the number of calls received. The schedule also gives credit for fire department listings (both emergency and business numbers) in convenient and conspicuous locations in local telephone directories.

Items 420-422: Operators—The schedule gives credit for each fire alarm operator, up to the number needed. The number of operators needed depends upon the total number of calls and the method of operation.

Items 430-432: Dispatch Circuits—Fire departments need adequate means for notifying personnel of the location of fires. The schedule gives credit for the availability and reliability of an alerting system to notify firefighters expected to respond. (Separate rules apply for single-station departments with on-duty personnel receiving alarms directly at the station.)

Items 510-513: Engine Companies—The schedule gives credit for each in-service pumper, up to the number needed. The number of pumpers needed depends on building fire flows, response distances, and method of operation. The amount of credit for each engine company depends on the equipment the company carries.

Items 520-523: Reserve Pumps—The schedule gives credit for pumpers in reserve.

Items 530-532: Pump Capacity—The schedule gives credit for pump capacity of in-service pumpers, reserve pumpers, and pumps on other apparatus, up to the needed pump capacity. The needed pump capacity depends upon the fifth-largest needed fire flow for the community, not to exceed 3,500 gpm.

Items 540-549: Ladder and Service Companies—The schedule gives credit for each in-service ladder and service company, up to the number of needed companies. The number of needed companies depends upon the height of buildings, the number of buildings with needed fire flows greater than 3,500 gpm, the response distances, and the method of operation. The schedule also gives credit for ladders, tools, and ladder-truck equipment normally carried on in-service apparatus for operations such as forcible entry, ventilation, salvage, and overhaul.

Items 550-553: Reserve Ladder and Service Trucks—The schedule gives credit for ladder and service trucks in reserve.

Items 560-561: Distribution of Companies—The schedule gives credit for the area of the city within satisfactory first-alarm response distance of pumpers, ladder companies, and service companies.

Items 570-571: Company Personnel—The schedule gives credit for the number of personnel responding to first alarms.

Items 580-581: Training—The schedule gives credit for facilities used to train individual firefighters and companies; training at fire stations; training of officers, drivers, and recruits; and prefire planning inspections.

Items 610-616: Water Supply—The schedule gives credit for the available water supply at representative locations in the city. The water supply works, the water-distribution system, or the spacing of fire hydrants may limit the adequacy of the water supply. For areas where fire hydrants are not available, the schedule includes criteria for recognizing alternative water supplies provided by fire departments. For a fire department to receive recognition for an alternative water supply, it must provide 250 gallons per minute of uninterrupted fire flow for a minimum of two hours (30,000 gallons of water).

The schedule allows credit for suction points, such as rivers, canals, lakes, wells, and cisterns. To be recognized as a water source such a suction point must have enough available water to satisfy the needed fire flow during freezing weather, floods, and the 50-year drought. (This is a drought with a two percent chance of happening in any one year.) There must be an all-weather access road, and the fire department must have permission to use the water.

Items 620-621: Hydrants—Size, Type, and Installation—The schedule gives credit for the number of satisfactory hydrants installed.

Items 630-631: Inspection and Condition of Hydrants—The schedule gives credit for the frequency and completeness of hydrant inspections and for the condition of the hydrants.

Items 700-701: Total Credit and Divergence—This item develops a community's PPC by summarizing the credits developed in the "Receiving and Handling Fire Alarms," "Fire Department," and "Water Supply" sections of the FSRS. An inadequate water supply can limit the effectiveness of a fine fire department, and a poorly equipped and trained fire department cannot effectively use a plentiful water supply. Therefore, a community's preliminary FSRS score is subject to modification by a

divergence factor, which recognizes any disparity in the effectiveness of the fire department and the water supply.

Items 800-802: Class 8B—Class 8B is for communities providing superior fire-protection services and fire-alarm facilities but lack the water supply required for a PPC of Class 8 or better. To be eligible for Class 8B, a community must meet the fundamental requirements for a classification better than Class 9. The community must have:

- an adequate number of well-organized and properly trained firefighters
- reliable fire-alarm facilities
- reliable fire apparatus with proper equipment
- adequate fire station facilities
- operational records

However, instead of providing a minimum fire flow of 250 gpm for two hours, the fire department must deliver an uninterrupted fire flow of 200 gpm for 20 minutes beginning within five minutes of the first-arriving engine company. The department must be able to provide the minimum fire flow to at least 85 percent of the built-upon areas of the community and score well in the "Receiving and Handling Fire Alarms" and the "Fire Department" sections of the FSRs.

Items 810-812: Class 9—Class 9 is for fire departments that lack a water supply for fire suppression meeting minimum criteria (250 gpm for two hours) and that have minimal fire suppression apparatus and equipment.

INDIVIDUAL PROPERTY FIRE SUPPRESSION

The Fire Suppression Rating Schedule provides separate rules for rating very large unsprinklered buildings that have a needed fire flow greater than 3,500 gpm. For such buildings ISO determines the PPC by comparing the available protection with the protection needed for each building.

Items 1000-1003: Evaluation of Fire Department Companies—The schedule gives credit for each in-service engine and ladder company, automatic-aid engine and ladder company, reserve pumper and ladder truck, and outside-aid engine and ladder company up to the number of needed engine and ladder companies. The number of needed companies depends upon the needed fire flow for the subject building.

Items 1100-1101: Water Supply System—The schedule gives credit for the available water supply for the subject building. The water supply works, the water distribution system, or the spacing of fire hydrants may limit the adequacy of the supply system.

Items 1200-1211: Classification for an Individual Property—This item develops a PPC for a specific building by considering the credit for fire department companies or the credit for water supply system, whichever is lower. The PPC for the subject building is the same as for the city as a whole unless the PPC for the building is lower. In such cases, the poorer class (but not less than Class 9 if the city is Class 9 or better) applies to the subject building.

During the last 18 months the Fresno Fire Department has been working with ISO to determine the anticipated impact additional resources would have on the grading schedule for the city. The following is the classification that was conducted on the city in December 1993.

SUMMARY OF CREDIT		
Feature	Credit Assigned	Maximum Credit
Receiving and Handling Fire Alarms	6.3	10.00
Fire Department	28.83	50.00
Water Supply	38.82	40.00
Divergence*	7.88	
Total Credit	66.07	100.00
Rate effective May 1, 1995.		
*Divergence is a reduction in credit to reflect a difference in the relative credits for fire department and water supply.		

The Public Protection Classification is based on the total percentage credit as follows:

Class	Percentage Credited
1	90.00 or more
2	80.00 to 89.99
3	70.00 to 79.99
4	60.00 to 69.99
5	50.00 to 59.99
6	40.00 to 49.99
7	30.00 to 39.99
8	20.00 to 29.99
9	10.00 to 19.99
10	0 to 9.99

In a letter dated December 9, 2005, ISO indicated the following:

Effective June 13, 2005, ISO has had a policy change regarding the deduction of personnel for medical-aid calls. ISO no longer makes a deduction of one member per 2000 medical-aid calls. Therefore, in

respect to Fresno's questions that involved adding fire companies and staffing, ISO has figured the grading points with a correction of +7.38 company personnel. Consequently, the points for Item 571, Credit for Company Personnel, will be higher. In addition, the department posed the following question to ISO.

Question: The Fresno Fire Department is in discussions with regionalizing the Fig Garden District, which is almost in the center of the city. This would add an engine company to the department's response matrix. If an engine company is placed in Fig Garden, it would run approximately 1,200 first-in calls a year and 85 percent would be city calls. This station would cover an additional 365 number of hydrants that are now uncovered as identified in Fresno's review.

ISO Response: The transfer of Fig Garden fire protection responsibilities to the city of Fresno by contract effective January 1, 2006 will add an additional engine company and a staff of three company personnel per shift. This engine company and personnel will be counted in Fresno's grading as it will have operational responsibilities in the city. In addition, it will cover approximately 267 additional number of fire hydrants located in the contract area and in Fresno's city limits. This is considered a needed engine company as it is at least 50 percent of an engine company standard response district. This is calculated at 238 number of hydrants. The additional hydrants covered would be counted in Item 561 of Fresno's grading.

The effect on Fresno's grading credits would be as follows:

	With Recent ISO Schedule Change	With Fire Station 20
Fire Dept Item 513	7.36	7.48
Fire Dept Item 523	0.74	0.75
Fire Dept Item 561	2.05	2.10
Fire Dept Item 571	6.11	6.90
Fire Dept Item 590	29.92	30.89
Divergence Item 700	-7.43	-7.04
Total Credit for Fresno	69.18	70.54

Staff requested ISO to provide an estimate for a number of scenarios that have been discussed in the 2025 Plan to determine the impact on Fresno's grading schedule. It appears with the addition of Fire Stations 15, 18, and 20 that Fresno's grading will improve to Class 3. The goal of achieving a Class 2 rating is also within reach for the city in the next several years, when additional resources are added.

EXISTING ISO POINTS—70.54		
Adding Fire Stations	Additional Premium*	Anticipated ISO Point Total
Station 15 (opened November 7, 2005)	+1.36	71.90
Station 18 (opened January 17, 2006)	+1.36	73.26
PROJECTED ISO POINTS SEPTEMBER 2006 – 73.26		
Engine Locations	Additional Premium	Anticipated ISO Point Total
Broadway/Elizabeth	+1.36	
Maple and Alluvial	+ .83	
Friant and Ft. Washington	+1.00	
Blythe and Herndon	+ .88	
Belmont/Temperance	+ .83	
Marks and Belmont	+ .83	
Additional Ladder Companies	Additional Premium	Anticipated ISO Point Total
Ladder Company 15	+2.55	
Ladder Company 13	+1.59	
Ladder Company 16	+1.68	
Truck/Squad Companies Friant Road/North Fort Washington	+1.84	
Increase Company Staffing	Additional Premium	Anticipated ISO Point Total
One, Four-Person Engine Company	+ .86	
Adding a fourth firefighter to an engine or truck	+ .10	
All Four-Person Engine Companies (19 engines)	+3.40	
All Four-Person Engine and Truck companies (19 engines, 5 trucks)	+3.89	
Squad Companies	Additional Premium	Anticipated ISO Point Total
One, Two-Person Squad Company	+1.36	
Two, Two-Person Squad Company	+ .29	
Three, Two-Person Squad Company	+ .29	
Four, Two-Person Squad Company	+ .29	
Five, Two-Person Squad Company	+ .29	
*Estimated improvement in ISO grading score.		

SUMMARY OF THE ISO SCHEDULE

In summary, the ISO evaluation of the city's fire suppression system includes a review of the dispatch center (10 percent weight), fire department (50 percent weight), and the water supply for fire suppression (40 percent weight).

The city's strengths and/or weaknesses in those areas will determine the classification or PPC.

Currently, the city of Fresno is rated at a Class 4 and is scheduled to be reviewed during the spring of 2007.

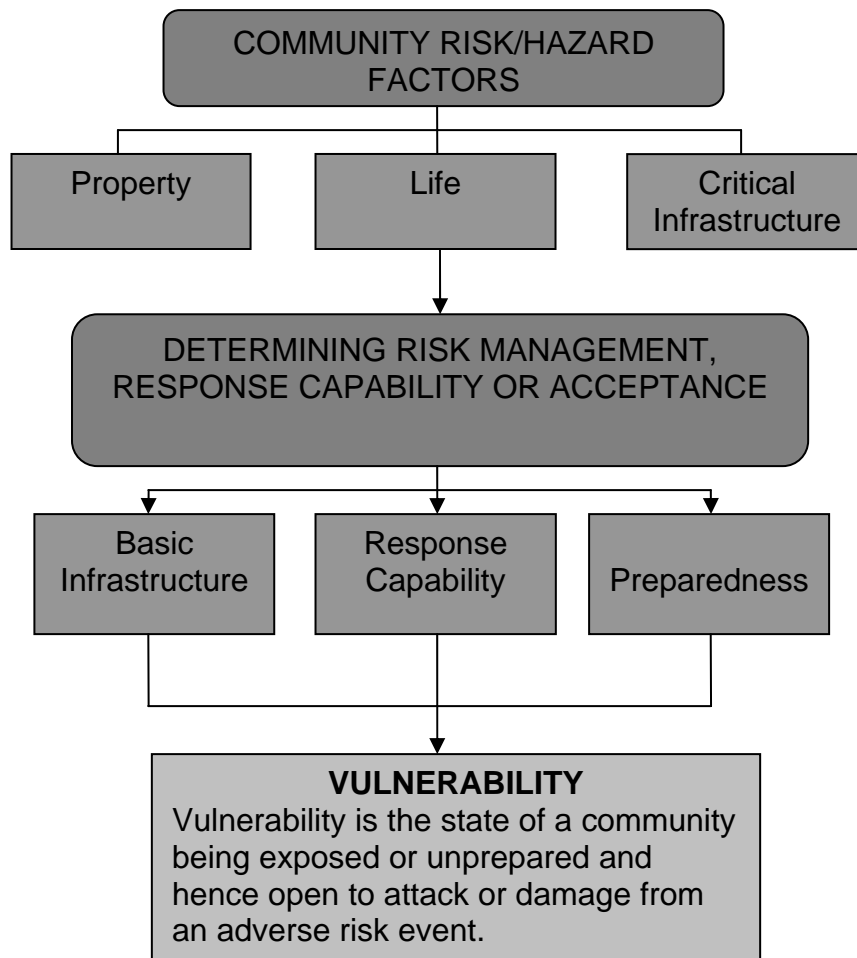
COMMISSION ON FIRE ACCREDITATION INTERNATIONAL (CFAI) RISK ASSESSMENT

The purpose of risk assessment is not only to evaluate risks and hazards in a fire department's response area but also to provide a basic methodology to evaluate existing response coverage. The process begins with the identification of community hazards and risks. Hazard is defined as *a source of potential danger or an adverse condition*; risk is defined as *the possibility of loss or injury; the exposure to the chance of loss; the combination of the probability of an event and the significance of the consequence (impact) of the event: Risk = Probability x Impact*. An evaluation system known as VISION™ is currently under development by the CFAI and partner organizations. This system groups risks into three separate categories that include: property, life, and critical infrastructure. Each of these categories contains sub-sets of risks/hazards relevant in determining overall community risk and vulnerability.

Once the details of risks/hazards are known for a community, then the community can design deployment of resources (or other activities, e.g., smoke detectors, public education, disaster planning, building/fire code amendments, etc.) to either manage the known risks or respond and mitigate the emergency when an adverse risk event occurs. (Fires and medical emergencies are adverse risk events, as are natural or other disasters.)

Department leaders must provide sufficient information to the elected officials to determine: 1) what resources to commit to risk management (prevention/pre-planning/preparation); 2) what resources to commit to response/mitigation; and 3) what level of risk to accept. These concepts are built upon the basic infrastructure that exists, the response capability and the current level of community preparedness.

The information compiled regarding community risks/hazards and the resources committed for risk management and/or response/mitigation of risk events that occur can be analyzed and an overall community "vulnerability score" calculated. The integrated risk management system, VISION™, will assist communities to achieve this objective.



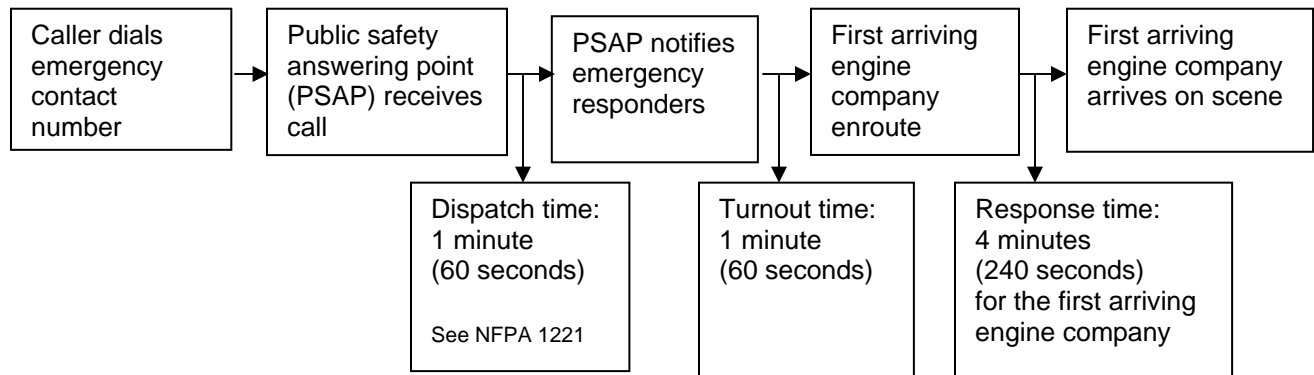
As part of City of Fresno's risk assessment process, the integrated risk management software VISION™ will be utilized beginning in the Spring of 2007.

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) 1710

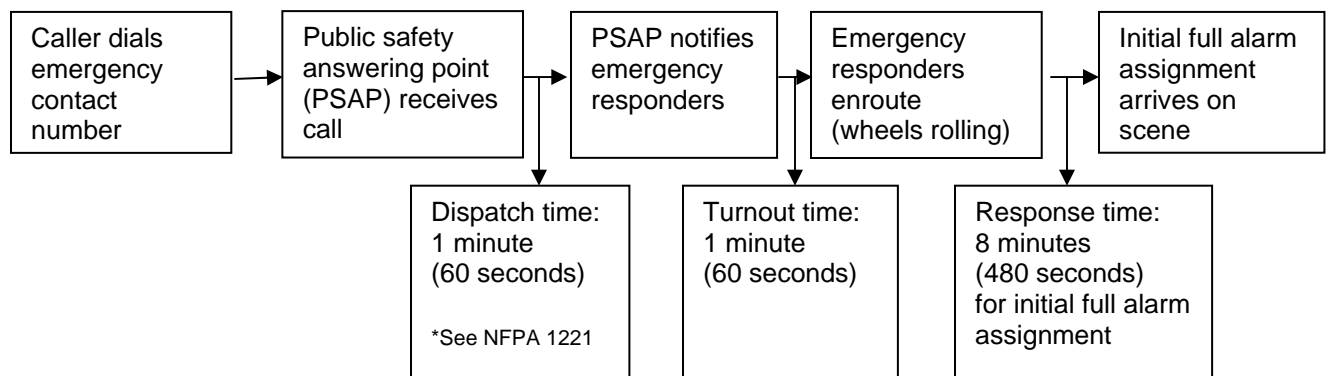
ORIGIN AND DEVELOPMENT OF NFPA 1710

The development of this standard adopted in 2000 was the result of a considerable amount of work over several years by the technical committee members appointed by NFPA representing several fire and governmental organizations. In the case of this standard, their work is the first organized approach to developing a standard, defining levels of service, deployment capabilities, and staffing levels for those "substantially" career fire departments. Research work and empirical studies in North America were used by the committee as a basis for developing response times and resource capabilities for those services being provided, as identified by the fire service. NFPA 1710 provides the user with a template for developing an implementation plan in respect to the standard. The NFPA 1710 standard set forth in concise terms the recommended resource requirements for fires, emergencies, and other incidents.

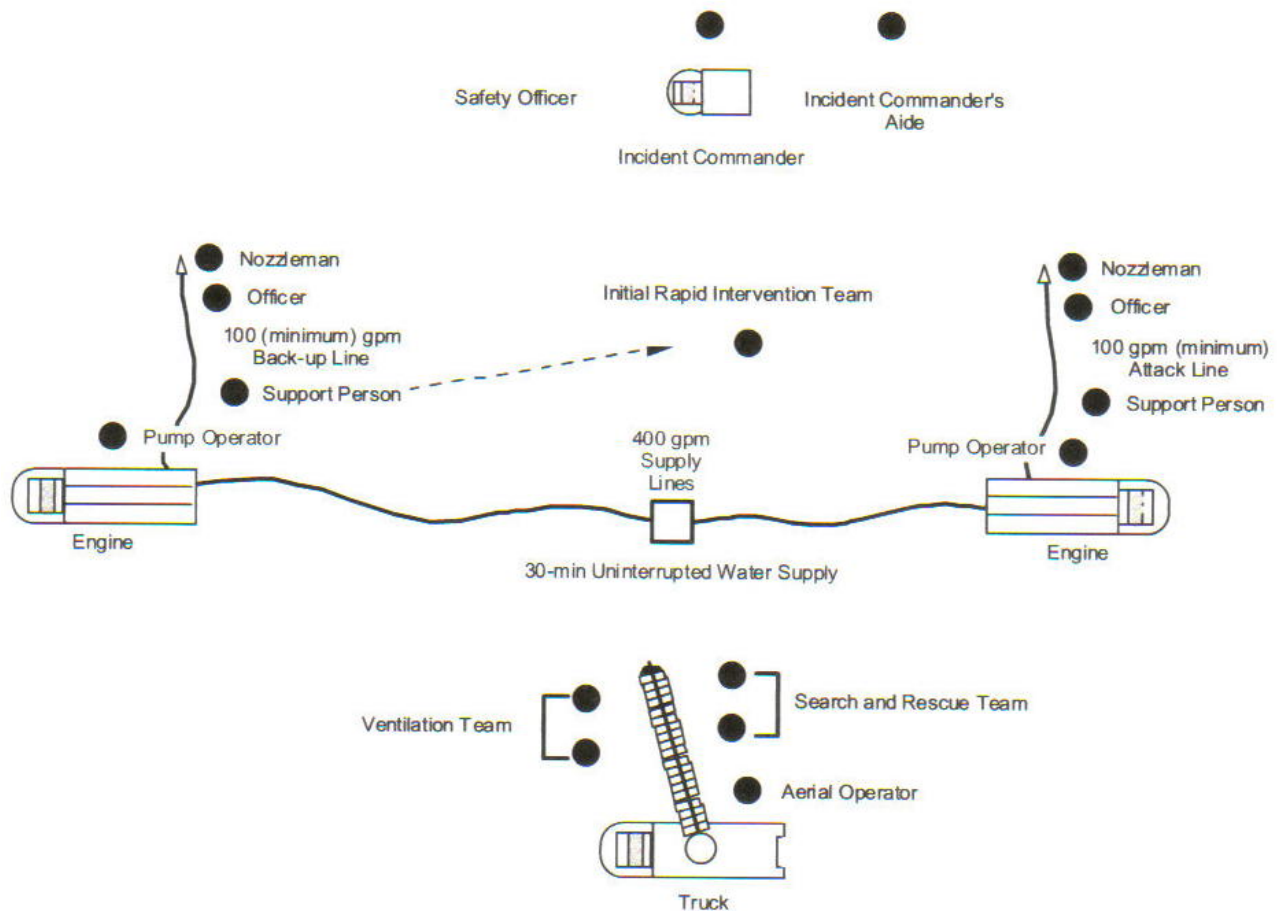
Response Time: Initial Arriving Engine Company



Response Time: Initial Full Alarm Assignment



Organization of 8-Minute Initial Attack



ORGANIZATION OF 8-MINUTE INITIAL ATTACK

There are three levels of EMS provision recognized in the NFPA 1710 standard:

1. First responder with AED
2. Basic life support (BLS)
3. Advanced life support (ALS)

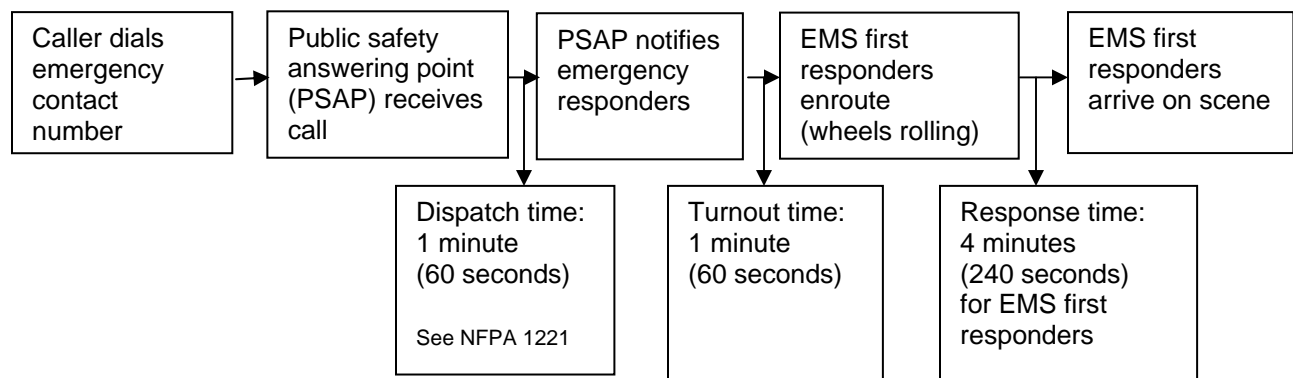
The standard also recognizes EMS transport as a service that may be provided by the fire department. It is not a requirement that a fire department provide all levels of EMS service beyond first responder (AED). However, the standard establishes operational requirements for each level provided by a department. For each level operational requirements are set forth as follows:

- a) First Responder (AED)—A fire department must appropriately train all response personnel at the first responder with AED capability level and personnel must arrive within a four-minute response timeframe to

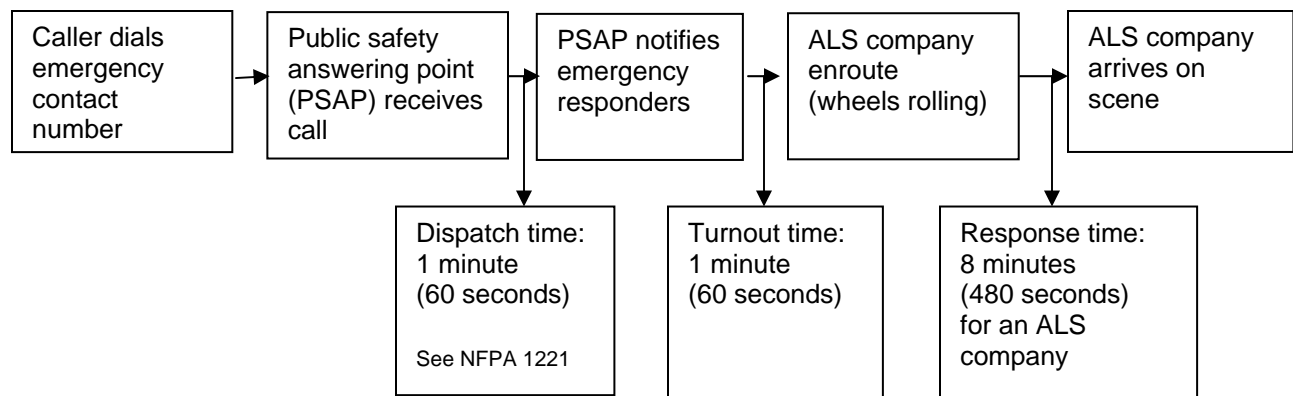
90 percent of all emergency medical incidents. The number of personnel must be sufficient to assure adequate care capability and member safety.

- b) BLS—A fire department providing BLS beyond the first responder level shall adhere to staffing and training requirements as set forth by the state or provincial licensing agency. The department must also deploy sufficient mobile resources to arrive within a four-minute response timeframe for 90 percent of all incidents.
- c) ALS—A fire department that provides ALS beyond the first responder and BLS levels shall adhere to staffing and training requirements as set forth by the state or provincial licensing agency. The department must also deploy sufficient mobile resources to arrive within an eight-minute response timeframe for 90 percent of all incidents.

Response Time: EMS First Responder (with an AED)



Response Time: ALS Company



The NFPA 1710 standard states that staffing and training requirements for both BLS and ALS transport units are to be determined by the state or provincial agency responsible for providing EMS licensing.

SPECIAL, ARFF, MARINE, AND WILDLAND OPERATIONS

The fire department is required to formally define the types of special operations required or expected to be performed in an emergency or other incident. These types of special operations include, but are not limited, to hazardous materials response, confined space response, technical rescue, high-angle rescue, and water rescue. Regardless of the fire department's defined special operation capability, all firefighters who provide emergency response must be trained to the first responder operations level for both hazardous materials and confined space responses. Likewise, all fire departments must define their response capability to natural disasters, terrorism incidents, large-scale emergencies, and mass casualty events. When fire departments have established that they will provide response beyond first-responder level for hazardous materials or confined space emergencies, they are required to ensure all members involved in this level of response be trained to the levels specified in the standard. The fire department must also determine the availability of resources outside the fire department through federal, state, provincial, or local assistance or private contractors who are deployed to emergencies and other incidents and the procedures for initiating such outside response. The fire department must also limit the level of response to special operation emergencies to the level for which it has staffed, trained, and equipped its personnel. Additionally, it must have the capacity to initiate a rapid intervention crew during any and all special operations responses. The NFPA 1710 standard requires airport fire departments be organized to ensure their response capabilities to non-aircraft incidents (non-airframe structural fires and EMS emergencies) within the department's response jurisdiction are identical to non-ARFF fire department capabilities.

The NFPA 1710 standard recognizes many, if not most, fire departments must respond to either wildland or wildland/urban interface fires. Accordingly, the fire department must address the service delivery for such occurrences. The standard specifies the minimum wildland staffing for defined wildland companies, as well as engine and truck companies that respond to wildland or urban interface/wildland emergencies. Likewise, deployment requirements for a wildland initial direct attack are specified.

A system is a functionally-related group of components. These are areas where a set of needs or requirements work closely together and are interrelated to achieve a key result. The NFPA 1710 standard addresses five of these systems.

- **Safety and Health**—Each organization must have an occupational safety and health program meeting the requirements of NFPA 1500, Standard on Fire Department Occupational Safety and Health Program.

- Incident Management—Each organization must have in place an incident management system designed to handle expected incidents. The system must be in accordance with NFPA 1561, Standard on Emergency Services Incident Management System.
- Training—Each organization must ensure members are trained to execute all responsibilities consistent with its organizational statement. This training must be accomplished using a programmatic approach that includes a policy.
- Communications—Each organization must have a communications system characterized by:
 - Reliability
 - Promptness
 - Standard operating procedures, terminology and protocols

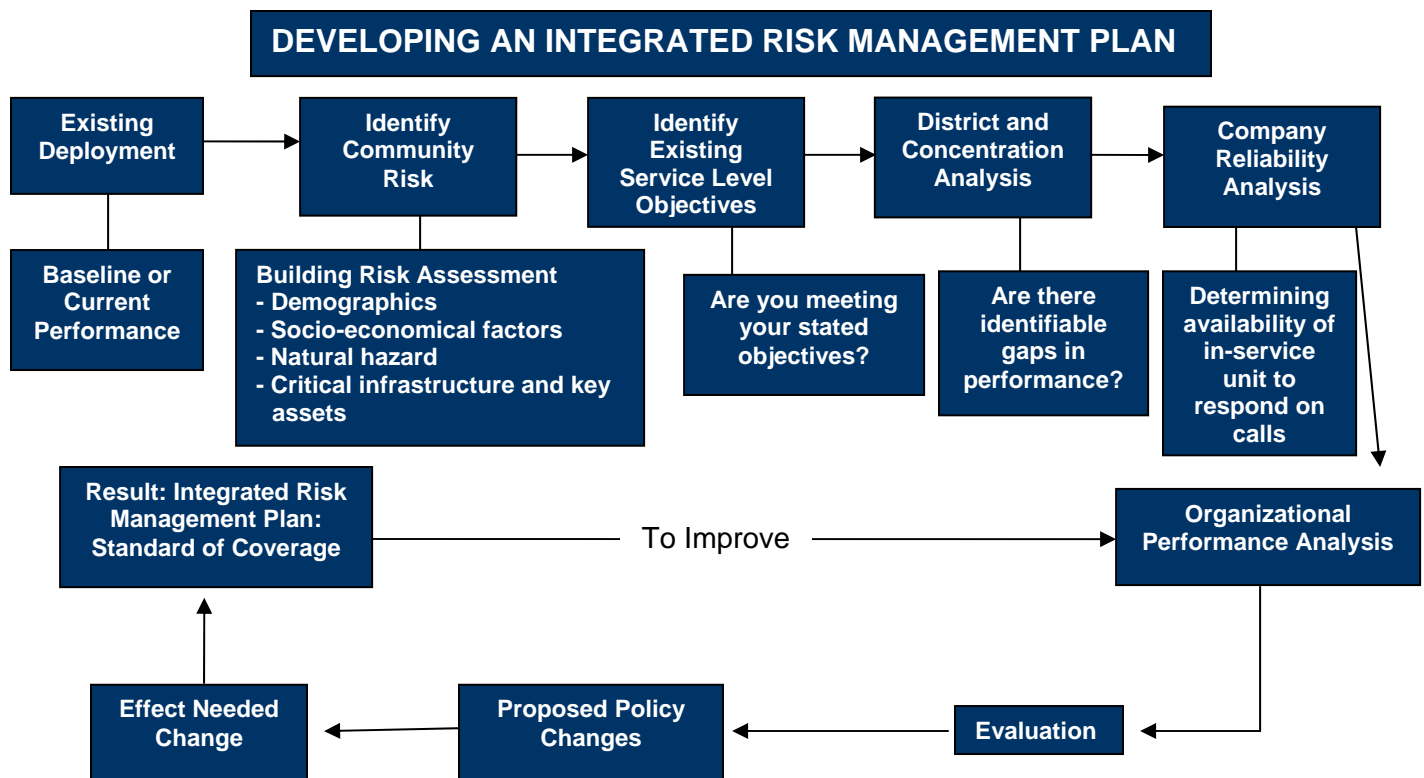
Departments must also comply with all the requirements set forth in NFPA 1221, Standard for the Installation, Maintenance, and Use of Emergency Services Communications Systems.

- Pre-Incident Planning—Safe and effective operations are grounded in identifying key and high hazard targets. The standard requires departments to develop operational requirements to obtain information regarding these locations.

Together, these five systems help to ensure that emergency responders have the essential tools, information, procedures, and safeguards to operate effectively and efficiently.

CITY OF FRESNO SERVICE LEVEL OBJECTIVE

Service level objectives are established based upon federal and state legislation, such as 2 In/2 Out, federal and state OSHA requirements, ISO grading schedule, national standards such as the one developed by the NFPA and best practices found in the CFAI agency accreditation process. The service level objectives identified for the city are based upon the events the fire department is called to respond to and the service provided by the fire department. These service objectives are the benchmark of performance in respect to travel times, but do not measure other aspects of performance.



In order to translate the efforts of the Fresno Fire Department into terms that the public and policymakers in the community can evaluate, they must be defined in measurable terms. A common term used in the evaluation of the fire service is "level of service," which is defined as:

The resources needed to meet stated service level objectives. Level of service is defined only in terms of what is provided and not in terms of effectiveness or of quality.

As the magnitude of emergencies range from small to catastrophic, the requirements for resources can vary greatly. A high-risk area could require a timely deployment of more fire companies for several reasons. More resources are required for the possible rescue of persons trapped within a high-risk building with a high-occupant load as compared to a low-risk building with a low-occupant load. More resources are required to control fires in large, heavily loaded structures than are needed for small buildings with limited contents. Therefore, creating a level of service consists of the analysis made regarding the distribution and concentration of resources needed in relation to the potential demand placed upon them by the level of community risk.

STANDARDS OF MEASUREMENT

The following are basic principles considered to be the factors in developing a level of service. Developing a risk assessment consists of eight key elements.

Fire Flow: The amount of water required to control a fire emergency, which is based on contents and type of materials involved.

Probability: The likelihood a particular event will occur within a given period of time. An event that occurs daily is highly probable. An event that occurs only once in a century is very unlikely. Probability is an estimate of how often an event will occur.

Consequence: Life safety (risk to the occupants from life-threatening situations, including both fire and EMS), economic impact (the losses of property, income, or irreplaceable assets), and responder risk (risk to the emergency responders who are called to handle the incident).

Occupancy Risk: An assessment of the relative risk to life and property resulting from a fire inherent in a specific occupancy or in a specified occupancy class.

Fire Management Areas: An area used to define geographical boundaries, referred to as fire management areas. The areas are often representative of a station's first-in response district.

Community Profile: The overall profile of the community based on the unique mixture of demographics, socioeconomic factors, occupancy risk, fire management areas, and the level of services currently provided.

Distribution: The station locations and resources (staffing and equipment) needed to assure rapid response deployment to minimize and terminate emergencies. Distribution is measured by the percent of the jurisdiction covered in respect to the adopted service level objectives.

Concentration: The spacing of multiple resources arranged so that an initial "effective response force" can arrive on scene within the identified service level objective to mobilize and likely stop the escalation of an emergency. Such an initial response may stop the escalation of the emergency, even in high risk areas. An initial "effective response force" is not necessarily the total number of units or personnel needed if the emergency escalated to the maximum potential.

CURRENT DEPLOYMENT

The City of Fresno responds to approximately 100 emergency calls per day. The type of event dictates the number of units and firefighters who are sent on the initial response.

DEPLOYMENT TO TYPICAL EMERGENCIES	
Type of Calls	Responding Units
Structure Fire: Commercial/Apartment	5 Engines, 2 Trucks, 1 Battalion Chief, 1 Investigator
Structure Fire: Residential	3 Engines, 2 Trucks, 1 Battalion Chief, 1 Investigator
Automatic Alarm	1 Engine
Outside Fires, Vehicle, Grass, Brush, Trash, Dumpster	1 Engine
Hazmat	1 Engine, Hazmat Response Team (1 Engine, 1 Truck, 1 Hazmat Vehicle)
Rescue, Structure Collapse	1 Engine, 1 Truck, 1 Battalion Chief, USAR Team (includes 1 Engine, 1 Truck, Rescue Vehicle)
Medical Aid, Injury Accident	1 Engine
Extrication	1 Engine, 1 Truck
Aircraft Emergency	2 ARFF vehicles, 2 Engine, 1 Truck



FRESNO FIRE DEPARTMENT SERVICE LEVEL OBJECTIVES

The following service level objectives relate to travel times of the initial response to an emergency. The objectives represent the benchmark the department is trying to achieve in each category.

Fresno Fire Department Service Level Objectives		
	First-Arriving Unit	Balance of a First-Alarm Assignment or Specialized Units
Suppression	4 Minutes/90 Percent Travel time of the first unit to an emergency once notified of the event to arrival at the incident.	8 Minutes/90 Percent Travel time of the balance of a first-alarm assignment (typically three engines, two trucks, and a battalion chief) to an emergency of the event to arrival at the incident.
Emergency Medical Services	4 Minutes/90 Percent Travel time of the first unit to an emergency once notified of the event to arrival at the incident.	8 Minutes/90 Percent Travel time of the balance of a first-alarm assignment (typically three engines, two trucks, and a battalion chief) to an emergency of the event to arrival at the incident.
Specialized Services		
Hazardous Materials	4 Minutes/90 Percent Travel time of the first unit to an emergency once notified of the event to arrival at the incident. Initial response companies provide first-responder operational and are Level B personnel protective qualified.	12 Minutes/90 Percent Travel time of the HazMat Team, which includes fully equipped hazmat response vehicle and five Level A qualified hazmat technicians.
Urban Search and Rescue (includes building collapse, confined space rescue, trench rescue, canal and river rescue)	4 Minutes/90 Percent Travel time of the first unit to an emergency once notified of the event to arrival at the incident. Initial response companies provide first-responder to USAR incidents and are qualified to the RS1 level.	10 Minutes/90 Percent Travel time of the USAR Team, which may include one of several USAR vehicles and five technical rescue specialists.
Aircraft Rescue Firefighting	3 Minutes/90 Percent Within three minutes from the time of the alarm, at least one required aircraft rescue and firefighting vehicle (ARFF unit) must reach the midpoint of the farthest runway serving air carrier aircraft from its assigned post or reach any other specified point of comparable distance on the movement area that is available to air carriers, and begin application of extinguishing agent.	4 Minutes/90 Percent Within four minutes from the time of alarm, all other required vehicles must reach the point from their assigned posts and begin application of an extinguishing agent. 8 Minutes/90 Percent Travel time to an in-flight emergency for off-site resources is two engines, one truck, and one battalion chief.

The department tracks three performance areas that have been identified in both the CFAI process and NFPA 1710.

Dispatch Alarm Process Time

The alarm process time is defined as and the time between the first ring of the 9-1-1 telephone at the dispatch center and the time the computer-aided (CAD) operator activates station and/or company alerting devices. The benchmark is currently 60 seconds.

Turnout Time

Turnout time is defined as the interval between the activation of station and/or company alerting devices and the time when the responding crew is aboard the apparatus and the apparatus is beginning to roll toward the call as noted by the mobile computer terminal or notifies dispatch by voice that the company is responding. During the reflex interval, crews cease other activities, don appropriate protective clothing, determine the location of the call, and board and start the fire apparatus. The benchmark is currently 60 seconds between 0700-2159 and 90 seconds between 2200-0659.

Travel Time

Travel time is defined as the point at which the responding apparatus signals the dispatch center that they are responding to the alarm and ends when the responding unit notifies the dispatcher of its arrival on scene (via voice or mobile computer terminal notification).

DEPARTMENT PERFORMANCE TO SERVICE LEVEL OBJECTIVES

Standard of Coverage Data 2006	
Department Summary	
Percent of time agency met turnout time of 60 seconds or less between 0700-2159 hours	40.31 Percent
Percent of time agency met turnout time of 90 seconds or less between 2200-0700	41.26 Percent
Percent of time balance of the first-alarm assignment arrived in eight minutes or less	88.01 Percent
Average response time for first-due units	5 Minutes 16 Seconds
Percent of time first-due unit arrived in four minutes or less	26.77 Percent
Average response time for first-alarm units	5 Minutes 37 Seconds

STATION ANALYSIS

A critical factor in developing a standard of coverage is to look at the overall system to see if it is meeting the established service level objects. It is common for fire and EMS response that distinctive geographic areas are built upon the first-response areas of the fire stations located throughout the city. This approach allows the fire department to analysis the workload and measure the performance of those stations based upon the identified service level objectives. By doing so it will assist the department to identify any areas of weakness, where additional stations may be warranted, or additional companies should be placed in service based upon the workload.

Following is a breakdown of each station and provides a detailed analysis for the companies' first-in response area. Performance measures are based upon the service level objectives and other workload indicators such as the total number of calls, inspectable occupancies, hydrants, and educational events are also included.



The following provides a detailed analysis of each station first-in response area.

Station No. 1 – 1264 North Jackson

Apparatus

Staffed Units: Engine (3), truck (3), battalion chief (1)
Additional Equipment Housed: Reserve truck

Workload Indicators

Suppression: 628 Percentage of Calls: 28 percent
EMS: 1,604 Percentage of Calls: 72 percent
Engine: 2,469
Truck: 742
Battalion Chief: 399
Total Calls: 2,232
Total inspectable occupancies: 1,178
Total hydrants: 758
Public education events: 20

Notable Statistics

Fire loss for first-in area: \$4,031,050
Average fire loss for incident: \$6,419

Service Level Objectives

Percentage of time company met turnout time of 60 seconds or less
between 0700 – 2159 hours: **51.15 percent**

Percentage of time company met turnout time of 90 seconds or less
between 2200 – 0659 hours: **62.11 percent**




Average response time for first-due unit: **4 minutes 46 seconds**

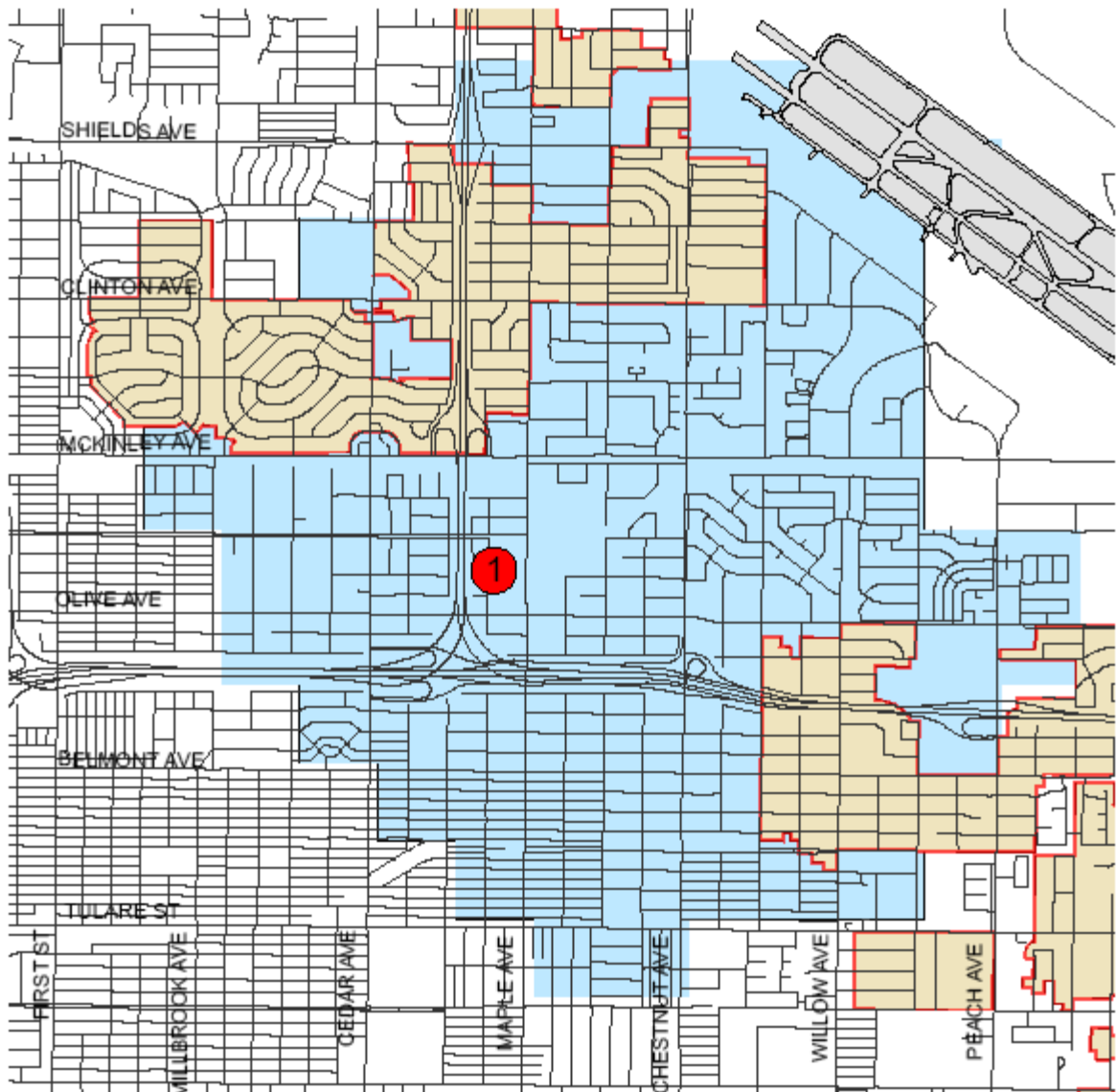
Percent of time first-due unit arrived 4 minutes or less: **28.07 percent**

Percentage of time balance of the first-alarm assignment arrived in eight
minutes or less: **93.32 percent**

Average response time for first-alarm units: **5 minutes**

Fresno City Fire Department Station 1 Response Area

-  City Limits
-  Response Area
-  Fresno County Fire



Station No. 2 – 7114 North West

Apparatus

Staffed Units: Engine (3)
Additional Equipment Housed: Water tender

Workload Indicators

Suppression: 301 Percentage of Calls: 38 percent
EMS: 496 Percentage of Calls: 62 percent
Engine: 957
Total Calls: 797
Total inspectable occupancies: 1,006
Total hydrants: 908
Public education events: 10

Notable Statistics

Fire loss for first-in area: \$370,305
Average fire loss for incident: \$1,230

Service Level Objectives

Percentage of time company met turnout time of 60 seconds or less
between 0700 – 2159 hours: **35.12 percent**

Percentage of time company met turnout time of 90 seconds or less
between 2200 – 0659 hours: **40.00 percent**

Average response time for first-due unit: **5 minutes 28 seconds**

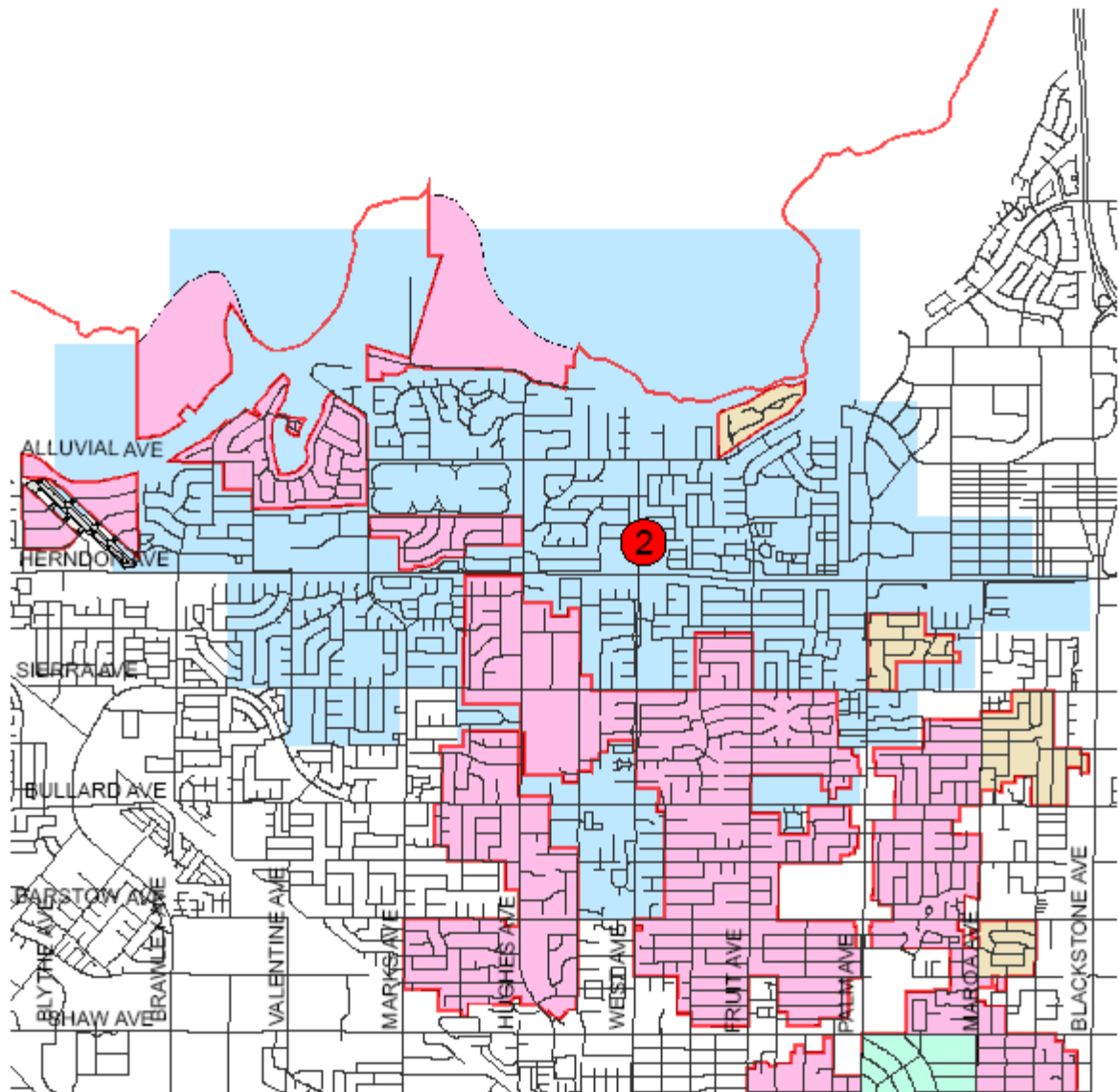
Percent of time first-due unit arrived 4 minutes or less: **15.42 percent**

Percentage of time balance of the first-alarm assignment arrived in eight
minutes or less: **86.29 percent**

Average response time for first-alarm units: **5 minutes 50 seconds**

Fresno City Fire Department Station 2 Response Area

- City Limits
- Response Area
- Fig Garden
- North Central Fire
- Fresno County Fire



Station No. 3 – 1406 Fresno

Apparatus

Staffed Units: Engine (3), truck (3)
Additional Equipment Housed: Water tender

Workload Indicators

Suppression: 1,069 Percentage of Calls: 28 percent
EMS: 2,806 Percentage of Calls: 72 percent
Engine: 3,766
Truck: 1,060
Total Calls: 3,875
Total inspectable occupancies: 1,148
Total hydrants: 910
Public education events: 28

Notable Statistics

Fire loss for first-in area: \$1,197,190
Average fire loss per incident: \$1,120

Service Level Objectives

Percentage of time company met turnout time of 60 seconds or less
between 0700 – 2159 hours: **40.83 percent**

Percentage of time company met turnout time of 90 seconds or less
between 2200 – 0659 hours: **35.50 percent**

Average response time for first-due unit: **4 minutes 45 seconds**

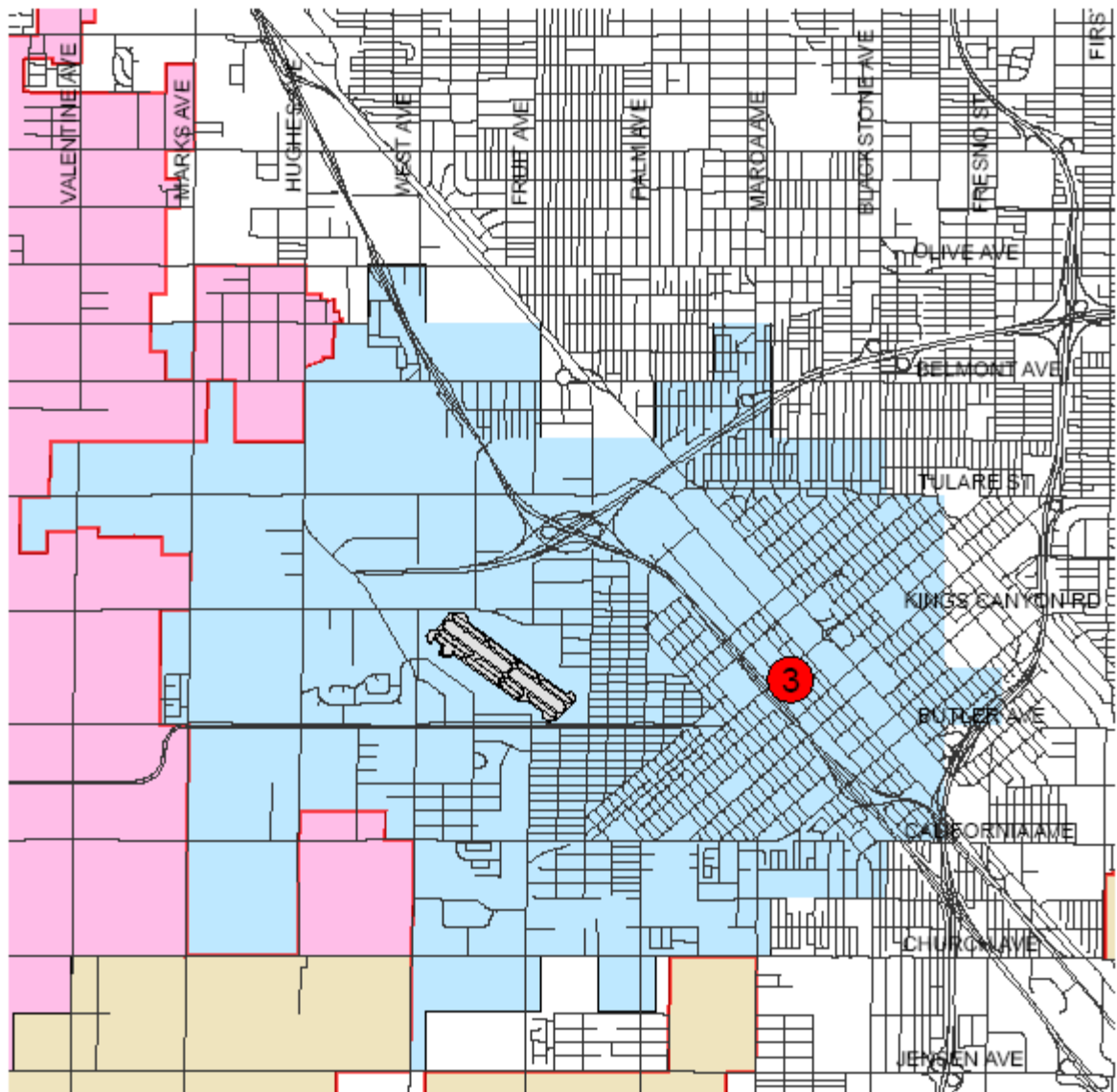
Percent of time first-due unit arrived 4 minutes or less: **35.50 percent**

Percentage of time balance of the first-alarm assignment arrived in eight
minutes or less: **92.22 percent**

Average response time for first-alarm units: **4 minutes 58 seconds**

Fresno City Fire Department Station 3 Response Area

- City Limits
- Response Area
- North Central Fire
- Fresno County Fire



Station No. 4 – 3065 East Iowa

Apparatus

Staffed Units: Engine (4)

Additional Equipment Housed: Reserve engine, Mobile Ventilation unit

Workload Indicators

Suppression: 784 Percentage of Calls: 33 percent

EMS: 1,564 Percentage of Calls: 67 percent

Engine: 2,712

Total Calls: 2,348

Total inspectable occupancies: 811

Total hydrants: 634

Public education events: 4

Notable Statistics

Fire loss for first-in area: \$1,000,845

Average fire loss per incident: \$1,277

Service Level Objectives

Percentage of time company met turnout time of 60 seconds or less between 0700 – 2159 hours: **49.43 percent**

Percentage of time company met turnout time of 90 seconds or less between 2200 – 0659 hours: **51.35 percent**

Average response time for first-due unit: **4 minutes 17 seconds**

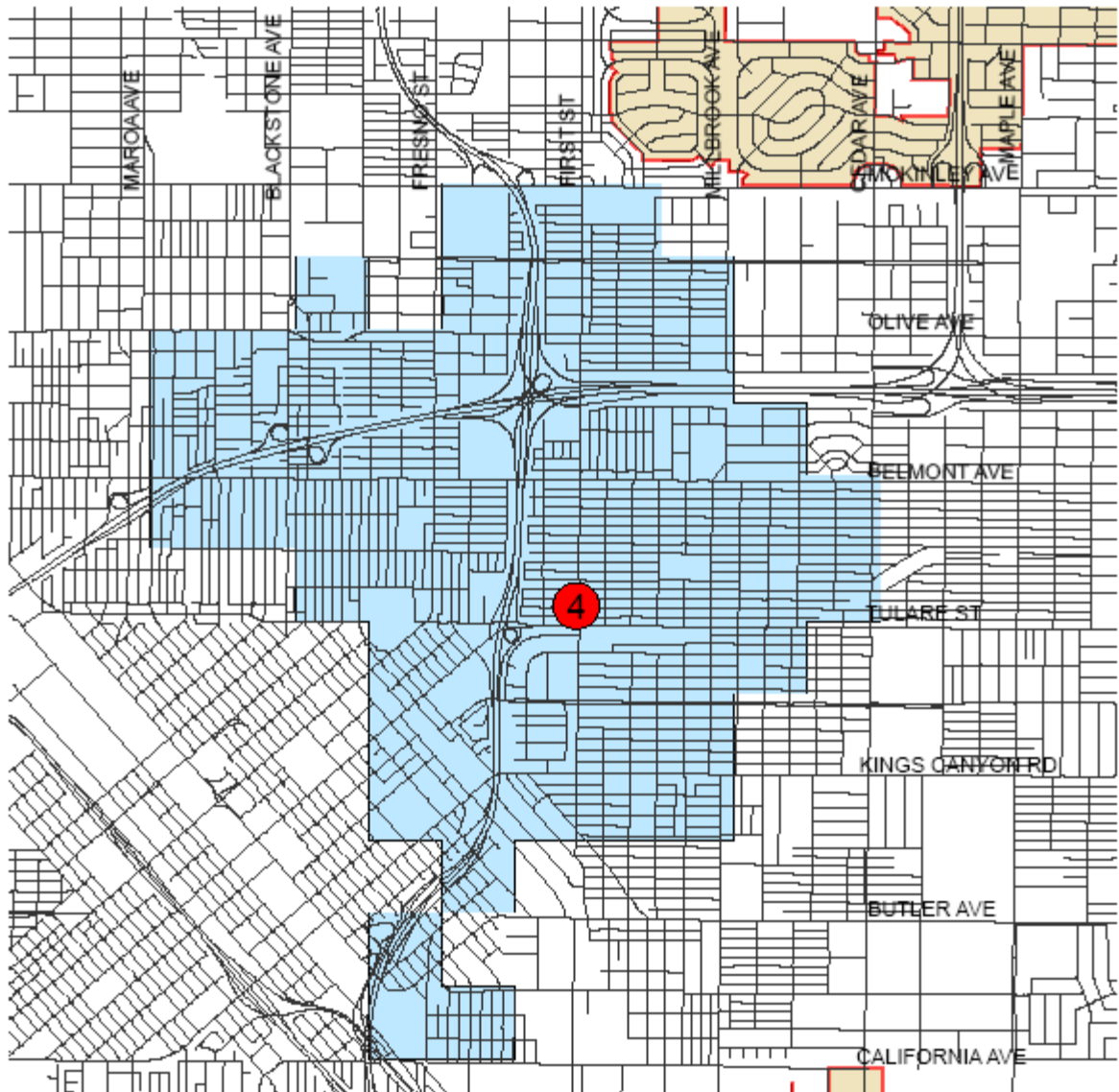
Percent of time first-due unit arrived 4 minutes or less: **44.87 percent**

Percentage of time balance of the first-alarm assignment arrived in eight minutes or less: **91.84 percent**

Average response time for first-alarm units: **5 minutes 4 seconds**

Fresno City Fire Department Station 4 Response Area

- City Limits
- Response Area
- Fresno County Fire



Station No. 5 – 3131 North Fresno

Apparatus

Staffed Units: Engine (3), 24-hour investigator (1)
Additional Equipment Housed:

Workload Indicators

Suppression: 754 Percentage of Calls: 29
EMS: 1,891 Percentage of Calls: 71
Engine: 3,022
Investigator: 774
Total Calls: 2,655
Total inspectable occupancies: 1,185
Total hydrants: 728
Public education events: 19

Notable Statistics

Fire loss for first-in area: \$933,425
Average fire loss per incident: \$1,222

Service Level Objectives

Percentage of time company met turnout time of 60 seconds or less
between 0700 – 2159 hours: **46.05 percent**

Percentage of time company met turnout time of 90 seconds or less
between 2200 – 0659 hours: **57.77 percent**

Average response time for first-due unit: **4 minutes 20 seconds**

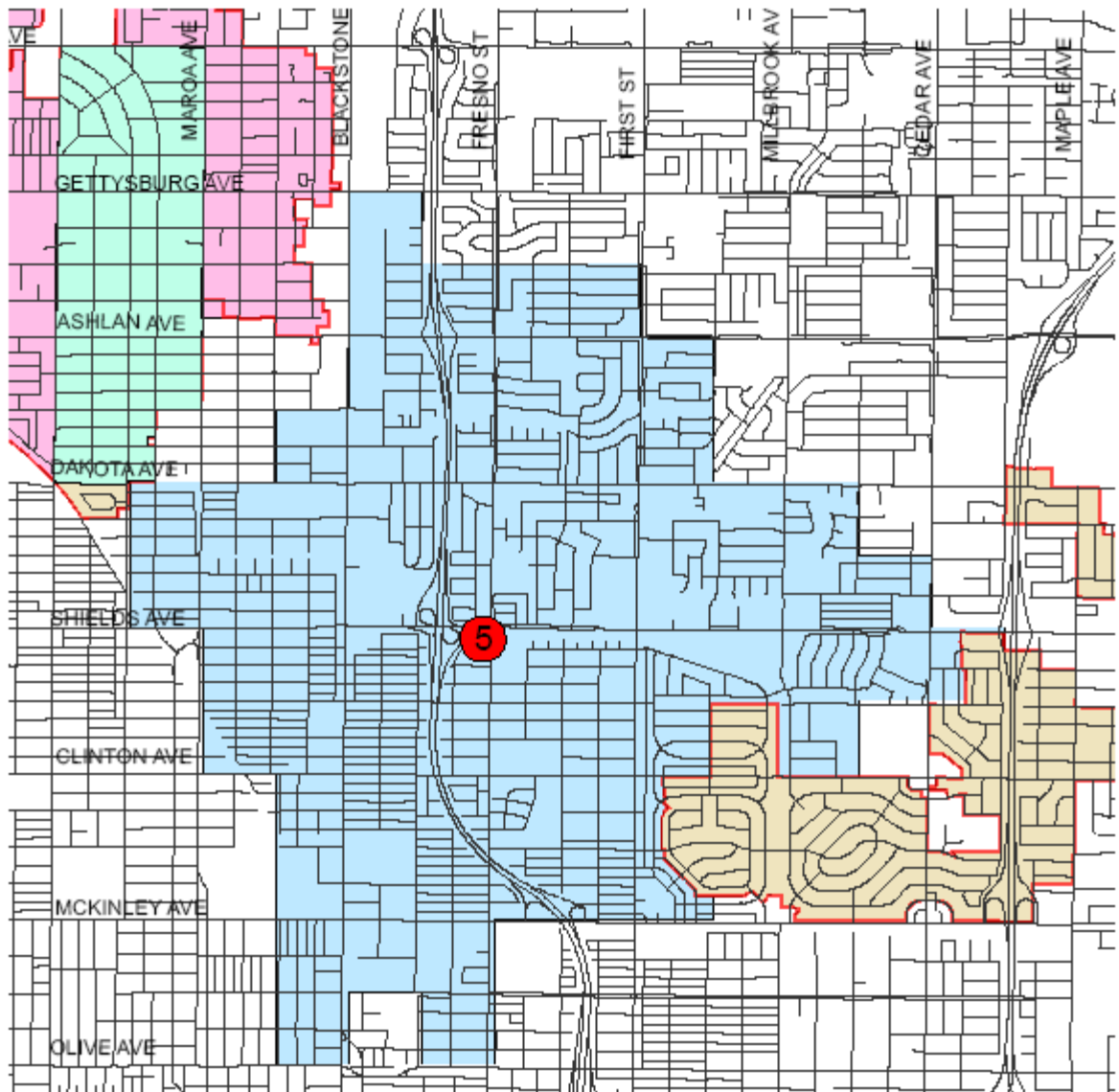
Percent of time first-due unit arrived 4 minutes or less: **40.63 percent**

Percentage of time balance of the first-alarm assignment arrived in eight
minutes or less: **97.50 percent**

Average response time for first-alarm units: **4 minutes 31 seconds**

Fresno City Fire Department Station 5 Response Area

- City Limits
- Response Area
- Fig Garden
- North Central Fire
- Fresno County Fire



Station No. 6 – 4343 East Gettysburg

Apparatus

Staffed Units: Engine (3)
Additional Equipment Housed:

Workload Indicators

Suppression: 449 Percentage of Calls: 31 percent
EMS: 996 Percentage of Calls: 69 percent
Engine: 1,755
Total Calls: 1,445
Total inspectable occupancies: 591
Total hydrants: 647
Public education events: 7

Notable Statistics

Fire loss for first-in area: \$753,606
Average fire loss per incident: \$1,678

Service Level Objectives

Percentage of time company met turnout time of 60 seconds or less
between 0700 – 2159 hours: 45.96 percent

Percentage of time company met turnout time of 90 seconds or less
between 2200 – 0659 hours: **36.22 percent**





Average response time for first-due unit: **4 minutes 47 seconds**

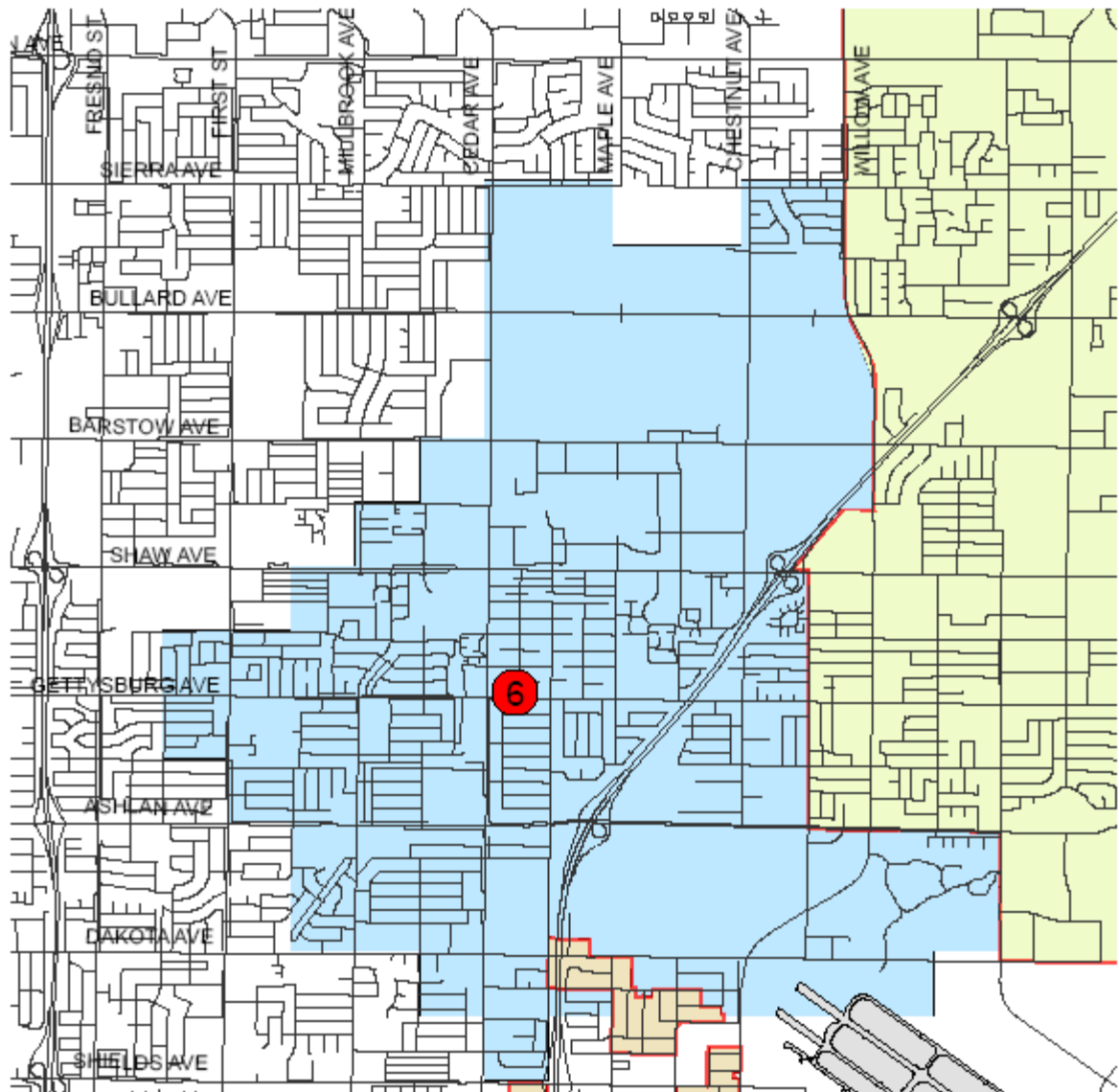
Percent of time first-due unit arrived 4 minutes or less: **29.64 percent**

Percentage of time balance of the first-alarm assignment arrived in eight
minutes or less: **86.92 percent**

Average response time for first-alarm units: **5 minutes 11 seconds**

Fresno City Fire Department Station 6 Response Area

-  City Limits
-  Response Area
-  Fresno County Fire
-  City of Clovis



Station No. 7 – 2571 South Cherry

Apparatus

Staffed Units: Engine (3)

Additional Equipment Housed: One hazmat vehicle, Decon Trailer

Workload Indicators

Suppression: 572 Percentage of Calls: 40

EMS: 870 Percentage of Calls: 60

Engine: 1,616

Total Calls: 1,442

Total inspectable occupancies: 398

Total hydrants: 604

Public education events: 7

Notable Statistics

Fire loss for first-in area: \$289,100

Average fire loss per incident: \$505

Service Level Objectives

Percentage of time company met turnout time of 60 seconds or less between 0700 – 2159 hours: **42.44 percent**

Percentage of time company met turnout time of 90 seconds or less between 2200 – 0659 hours: **48.91 percent**

Average response time for first-due unit: **5 minutes 9 seconds**

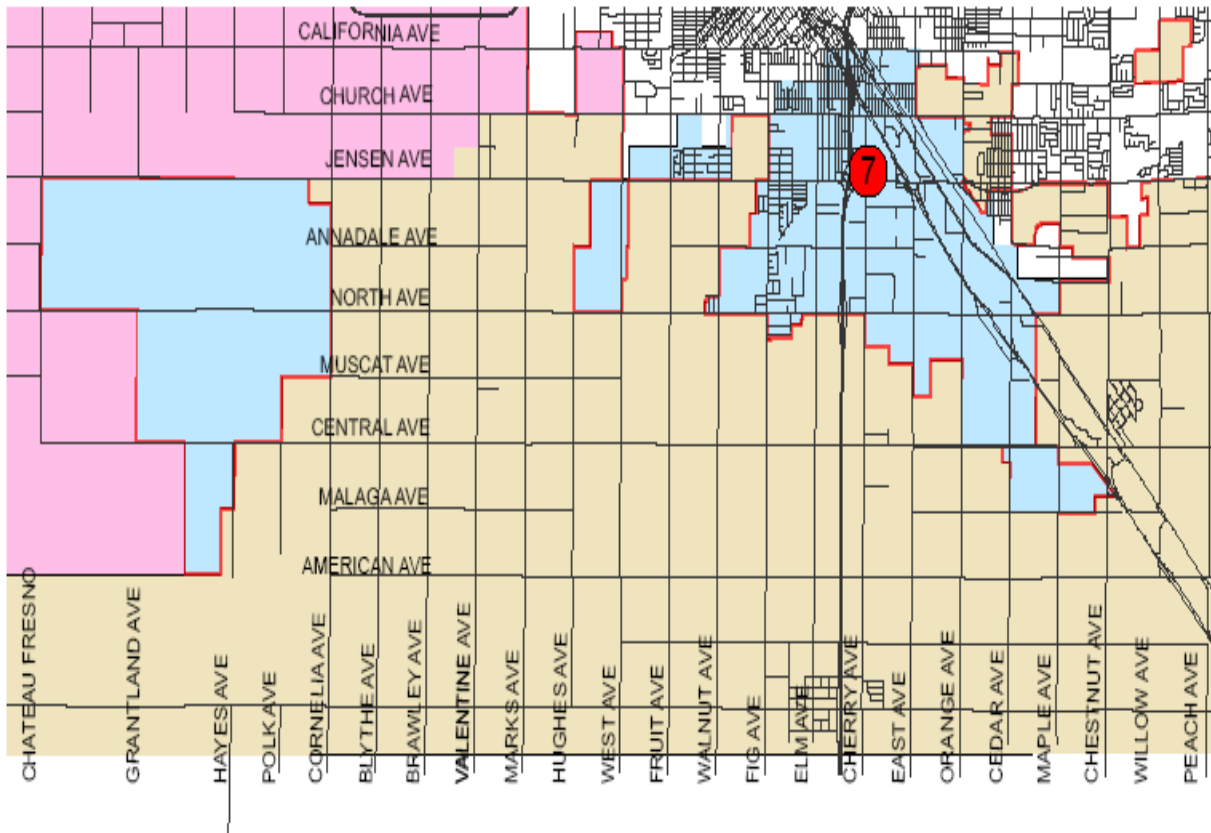
Percent of time first-due unit arrived 4 minutes or less: **28.02 percent**

Percentage of time balance of the first-alarm assignment arrived in eight minutes or less: **88.79 percent**

Average response time for first-alarm units: **5 minutes 40 seconds**

Fresno City Fire Department Station 7 Response Area

- City Limits
- Response Area
- North Central Fire
- Fresno County Fire



8/1/2006

Station No. 8 – 1428 South Cedar

Apparatus

Staffed Units: Engine (3)

Additional Equipment Housed: Reserve engine

Workload Indicators

Suppression: 652 Percentage of Calls: 27

EMS: 1,775 Percentage of Calls: 73

Engine: 2,490

Total Calls: 2,427

Total inspectable occupancies: 501

Total hydrants: 816

Public education events: 17

Notable Statistics

Fire loss for first-in area: \$340,610

Average fire loss per incident: \$522

Service Level Objectives

Percentage of time company met turnout time of 60 seconds or less between 0700 – 2159 hours: **54.53 percent**

Percentage of time company met turnout time of 90 seconds or less between 2200 – 0659 hours: **59.27 percent**




Average response time for first-due unit: **4 minutes 29 seconds**

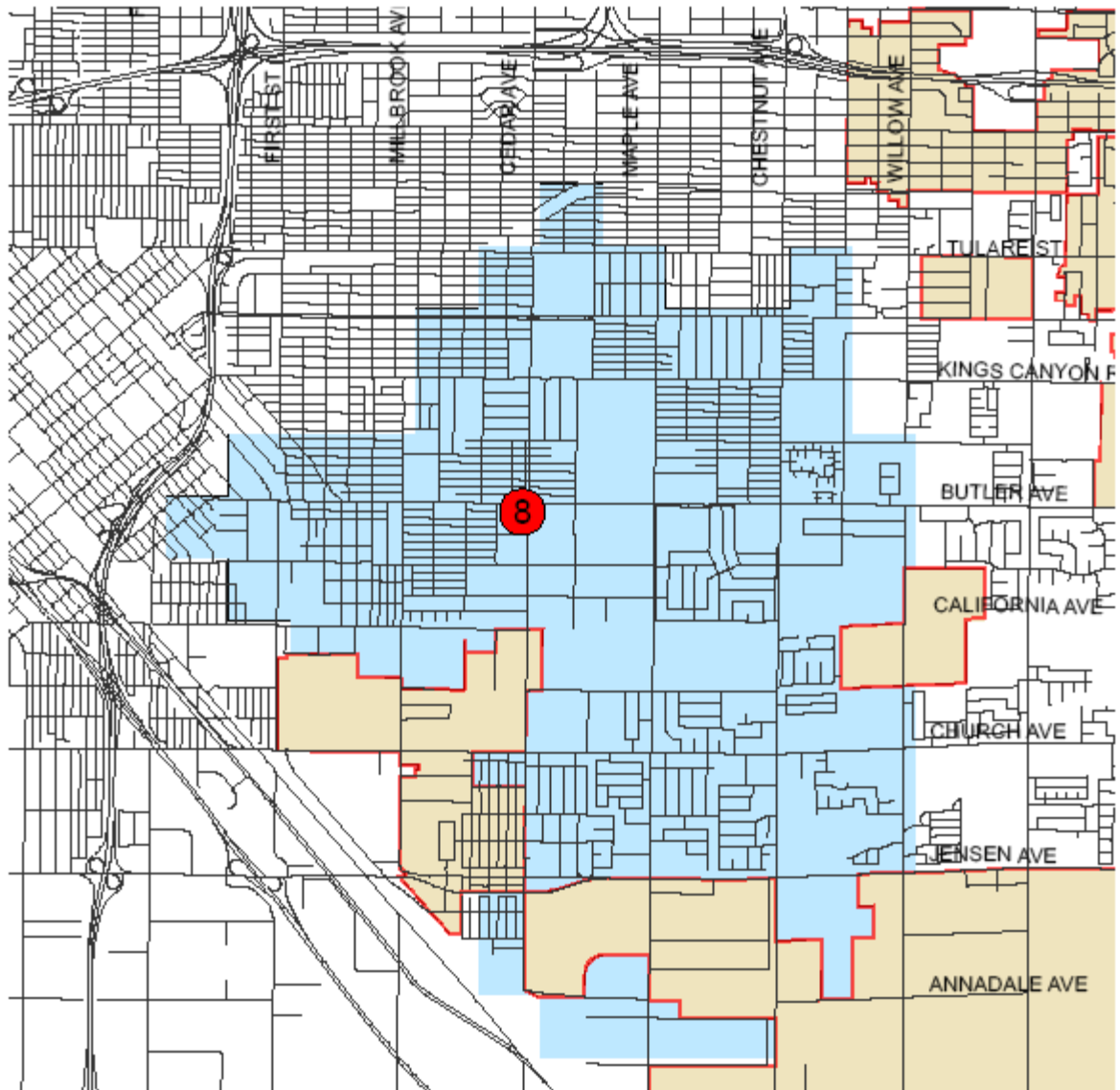
Percent of time first-due unit arrived 4 minutes or less: **39.48 percent**

Percentage of time balance of the first-alarm assignment arrived in eight minutes or less: **93.30 percent**

Average response time for first-alarm units: **4 minutes 50 seconds**

Fresno City Fire Department Station 8 Response Area

-  City Limits
-  Response Area
-  Fresno County Fire



Station No. 9 – 2340 North Vagedes

Apparatus

Staffed Units: Engine (3), truck (3), battalion chief (1)
Additional Equipment Housed: Reserve truck

Workload Indicators

Suppression: 943 Percentage of Calls: 27 percent
EMS: 2,516 Percentage of Calls: 73 percent
Engine: 3,288
Truck: 986
Total Calls: 3,459
Battalion chief: 438
Total inspectable occupancies: 880
Total hydrants: 896
Public education events: 13

Notable Statistics

Fire loss for first-in area: \$2,742,815
Average fire loss per incident: \$2,909

Service Level Objectives

Percentage of time company met turnout time of 60 seconds or less
between 0700 – 2159 hours: **44.91 percent**

Percentage of time company met turnout time of 90 seconds or less
between 2200 – 0659 hours: **48.95 percent**

Average response time for first-due unit: **5 minutes 4 seconds**

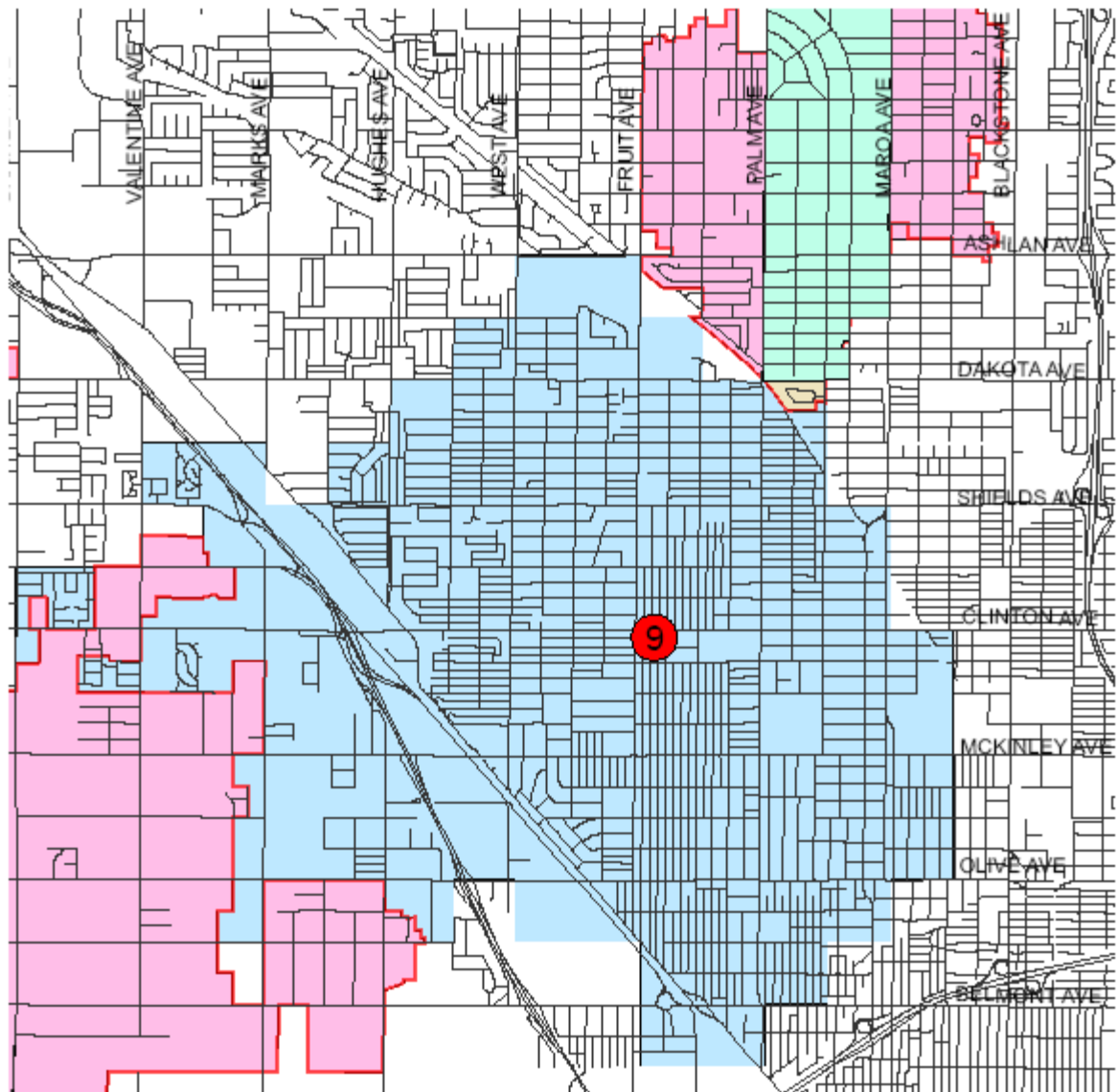
Percent of time first-due unit arrived 4 minutes or less: **26.70 percent**

Percentage of time balance of the first-alarm assignment arrived in eight
minutes or less: **90.53 percent**

Average response time for first-alarm units: **5 minutes 19 seconds**

Fresno City Fire Department Station 9 Response Area

- City Limits
- Response Area
- Fig Garden
- North Central Fire
- Fresno County Fire



Station No. 10 – 5545 Air Terminal

Apparatus

Staffed Units: Engine (3)
Additional Equipment Housed:

Workload Indicators

Suppression: 200 Percentage of Calls: 48
EMS: 213 Percentage of Calls: 52
Engine: 617
Total Calls: 413
Total inspectable occupancies: 635
Total hydrants: 483
Public education events: 8

Notable Statistics

Fire loss for first-in area: \$93,220
Average fire loss per incident \$466

Service Level Objectives

Percentage of time company met turnout time of 60 seconds or less
between 0700 – 2159 hours: **32.28 percent**

Percentage of time company met turnout time of 90 seconds or less
between 2200 – 0659 hours: **37.50 percent**

Average response time for first-due unit: **7 minutes 29 seconds**

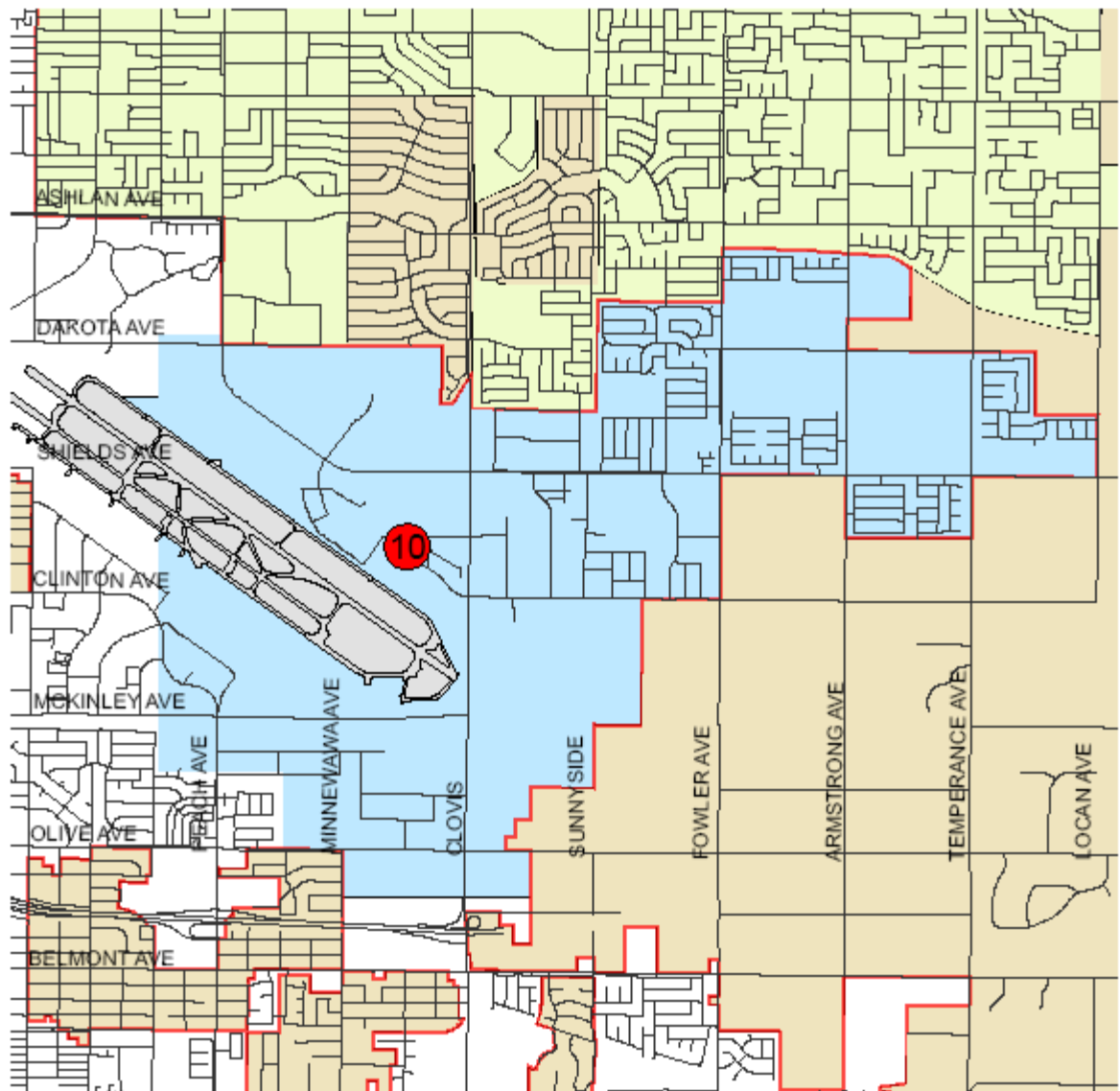
Percent of time first-due unit arrived 4 minutes or less: **11.76 percent**

Percentage of time balance of the first-alarm assignment arrived in eight
minutes or less: **69.86 percent**

Average response time for first-alarm units: **7 minutes 45 seconds**

Fresno City Fire Department Station 10 Response Area

- City Limits
- Response Area
- Fresno County Fire
- City of Clovis



Station No. 11 – 5544 North Fresno

Apparatus

Staffed Units: Engine (3), truck (2), rescue (1)
Additional Equipment Housed: Reserve rescue Vehicle

Workload Indicators

Suppression: 703 Percentage of Calls: 36 percent
EMS: 1,263 Percentage of Calls: 64 percent
Engine: 2,250
Truck: 764
Rescue: 46
Total Calls: 1,966
Total inspectable occupancies: 1,482
Total hydrants: 802
Public education events: 20

Notable Statistics

Fire loss for first-in area: \$571,255
Average fire loss per incident: \$813

Service Level Objectives

Percentage of time company met turnout time of 60 seconds or less
between 0700 – 2159 hours: **35.18 percent**

Percentage of time company met turnout time of 90 seconds or less
between 2200 – 0659 hours: **38.30 percent**

Average response time for first-due unit: **4 minutes 41 seconds**

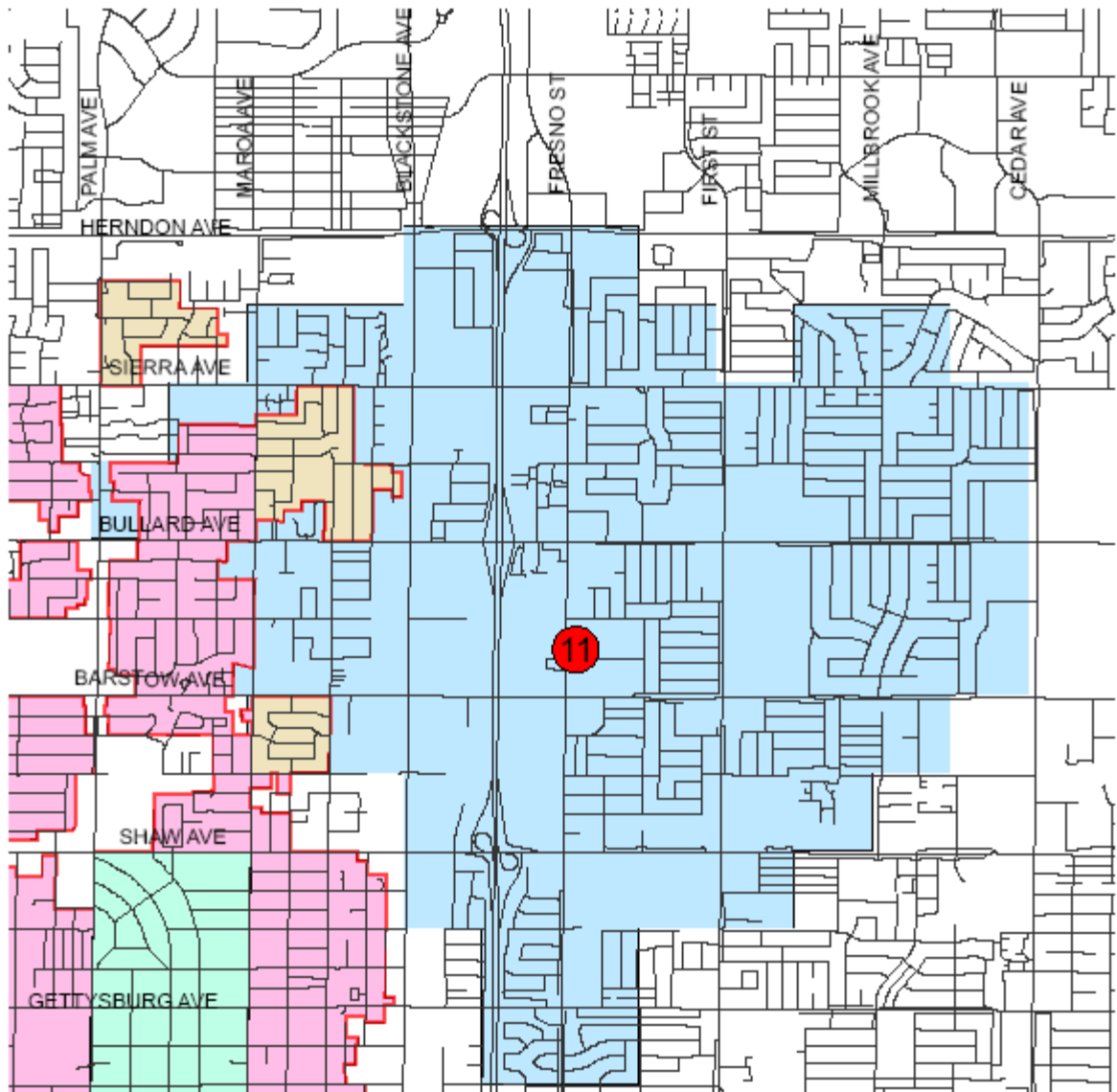
Percent of time first-due unit arrived 4 minutes or less: **39.01 percent**

Percentage of time balance of the first-alarm assignment arrived in eight
minutes or less: **91.57 percent**

Average response time for first-alarm units: **4 minutes 59 seconds**

Fresno City Fire Department Station 11 Response Area

- City Limits
- Response Area
- Fig Garden
- North Central Fire
- Fresno County Fire



Station No. 12 – 2874 West Acacia

Apparatus

Staffed Units: Engine (3)

Additional Equipment Housed: Reserve engine

Workload Indicators

Suppression: 608 Percentage of Calls: 34 percent

EMS: 1,199 Percentage of Calls: 66 percent

Engine: 2,009

Total Calls: 1,807

Total inspectable occupancies: 1,246

Total hydrants: 947

Public education events: 7

Notable Statistics

Fire loss for first-in area: \$1,001,080

Average fire loss per incident: \$1,647

Service Level Objectives

Percentage of time company met turnout time of 60 seconds or less between 0700 – 2159 hours: **43.25 percent**

Percentage of time company met turnout time of 90 seconds or less between 2200 – 0659 hours: **34.73 percent**

Average response time for first-due unit: **4 minutes 59 seconds**

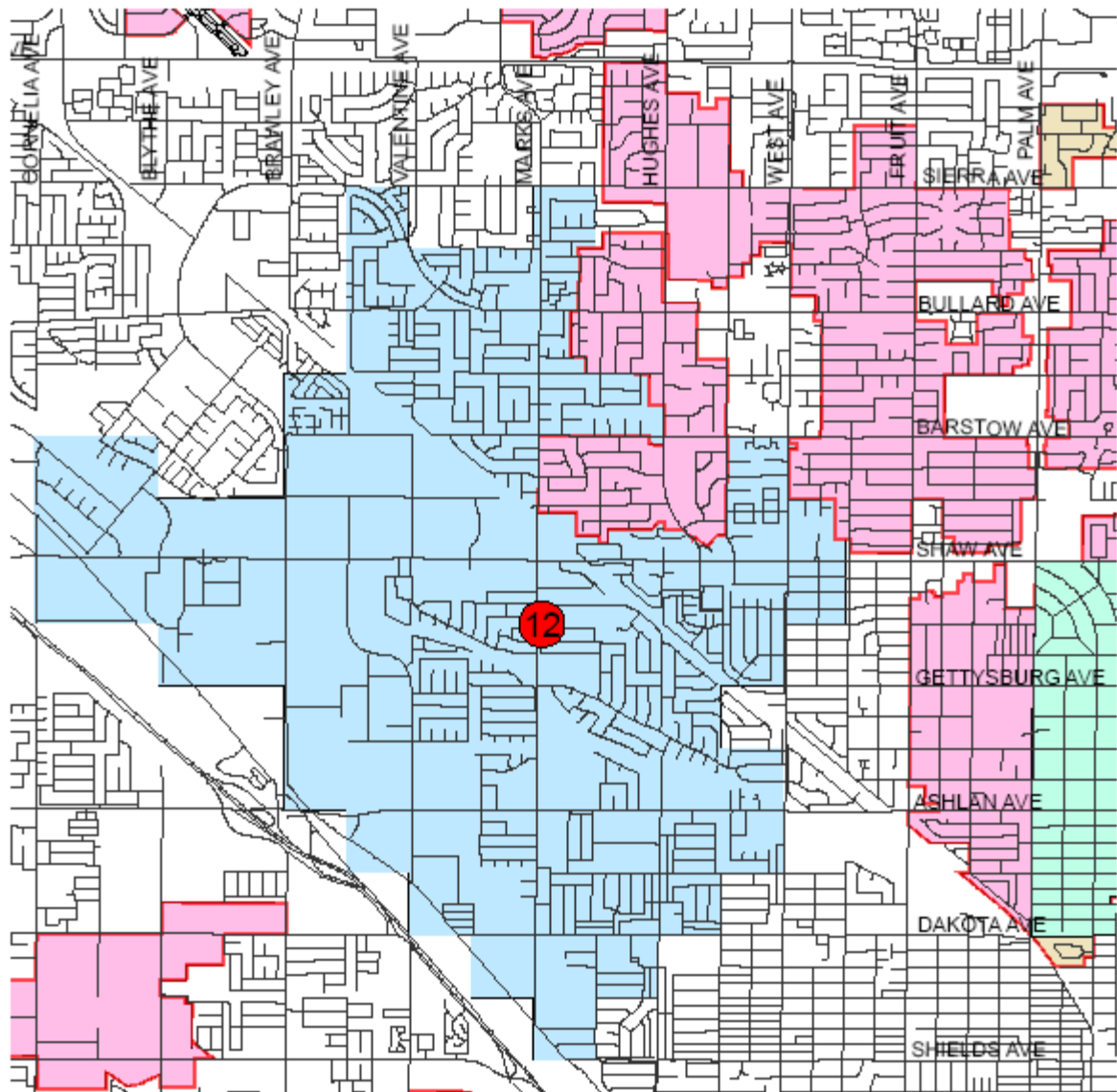
Percent of time first-due unit arrived 4 minutes or less: **31.14 percent**

Percentage of time balance of the first-alarm assignment arrived in eight minutes or less: **88.55 percent**

Average response time for first-alarm units: **5 minutes 23 seconds**

Fresno City Fire Department Station 12 Response Area

- City Limits
- Response Area
- Fig Garden
- North Central Fire
- Fresno County Fire



Station No. 13 – 815 East Nees

Apparatus

Staffed Units: Engine (3)

Additional Equipment Housed: Reserve engine

Workload Indicators

Suppression: 864 Percentage of Calls: 39 percent

EMS: 1,372 Percentage of Calls: 61 percent

Engine: 2,150

Total Calls: 2,236

Total inspectable occupancies: 1,092

Total hydrants: 1,671

Public education events: 24

Notable Statistics

Fire loss for first-in area: \$2,215,005

Average fire loss per incident: \$2,564

Service Level Objectives

Percentage of time company met turnout time of 60 seconds or less between 0700 – 2159 hours: **39.73 percent**

Percentage of time company met turnout time of 90 seconds or less between 2200 – 0659 hours: **40.94 percent**

Average response time for first-due unit: **5 minutes 32 seconds**

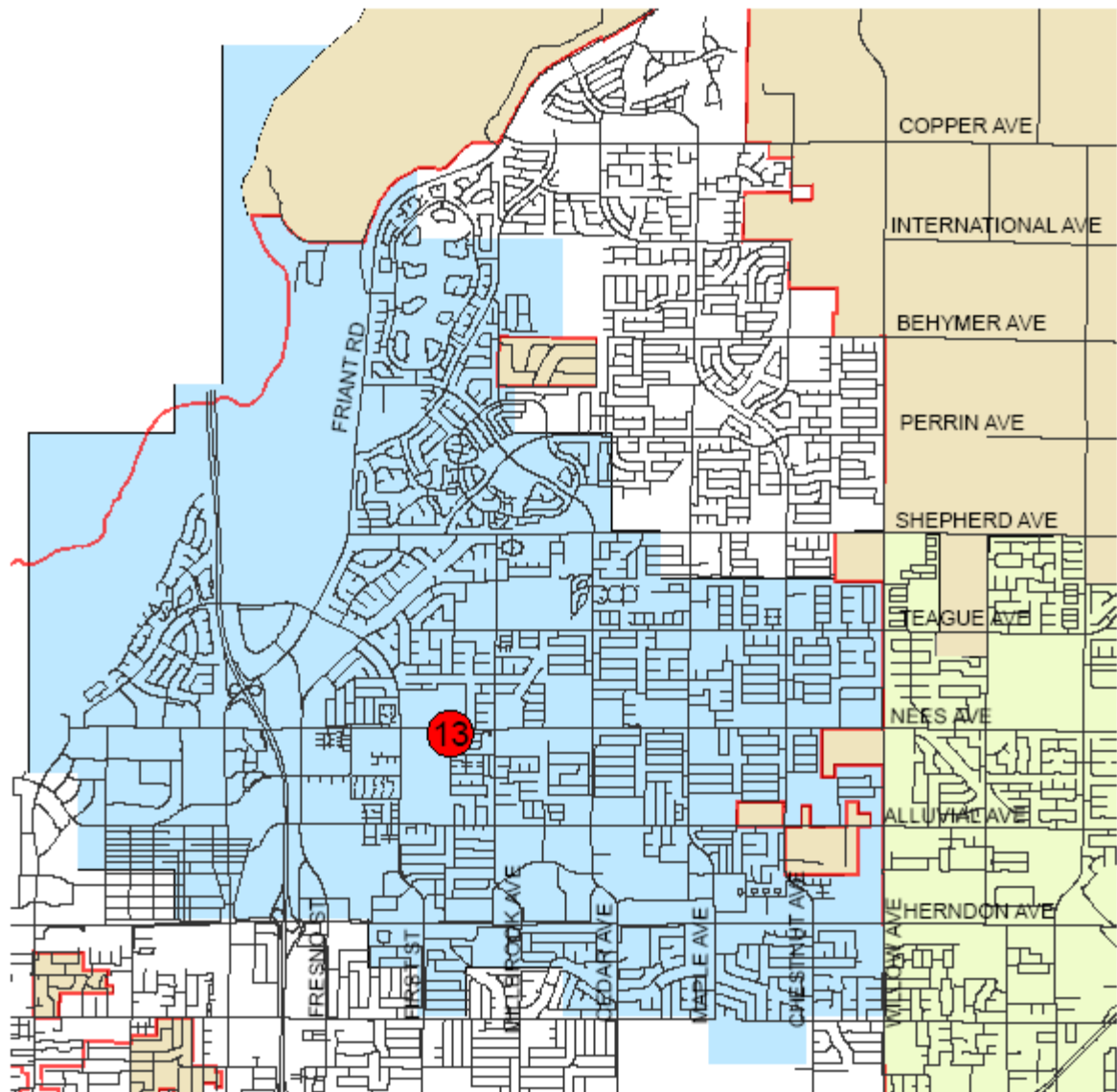
Percent of time first-due unit arrived 4 minutes or less: **20.92 percent**

Percentage of time balance of the first-alarm assignment arrived in eight minutes or less: **87.91 percent**

Average response time for first-alarm units: **5 minutes 48 seconds**

Fresno City Fire Department Station 13 Response Area

- City Limits
- Response Area
- Fresno County Fire
- City of Clovis



Response Area being re-configured to reflect new streets in the area of Station 17.

Station No. 14 – 6239 North Polk

Apparatus

Staffed Units: Engine (3), truck (2), hazmat (1)
Additional Equipment Housed:

Workload Indicators

Suppression: 252 Percentage of Calls: 34 percent
EMS: 493 Percentage of Calls: 66 percent
Engine: 923
Truck: 233
Hazmat: 70
Total Calls: 745
Total inspectable occupancies: 750
Total hydrants: 810
Public education events: 5

Notable Statistics

Fire loss for first-in area: \$399,255
Average fire loss per incident: \$1,584

Service Level Objectives

Percentage of time company met turnout time of 60 seconds or less
between 0700 – 2159 hours: **37.08 percent**

Percentage of time company met turnout time of 90 seconds or less
between 2200 – 0659 hours: **39.29 percent**

Average response time for first-due unit: **5 minutes 31 minutes**

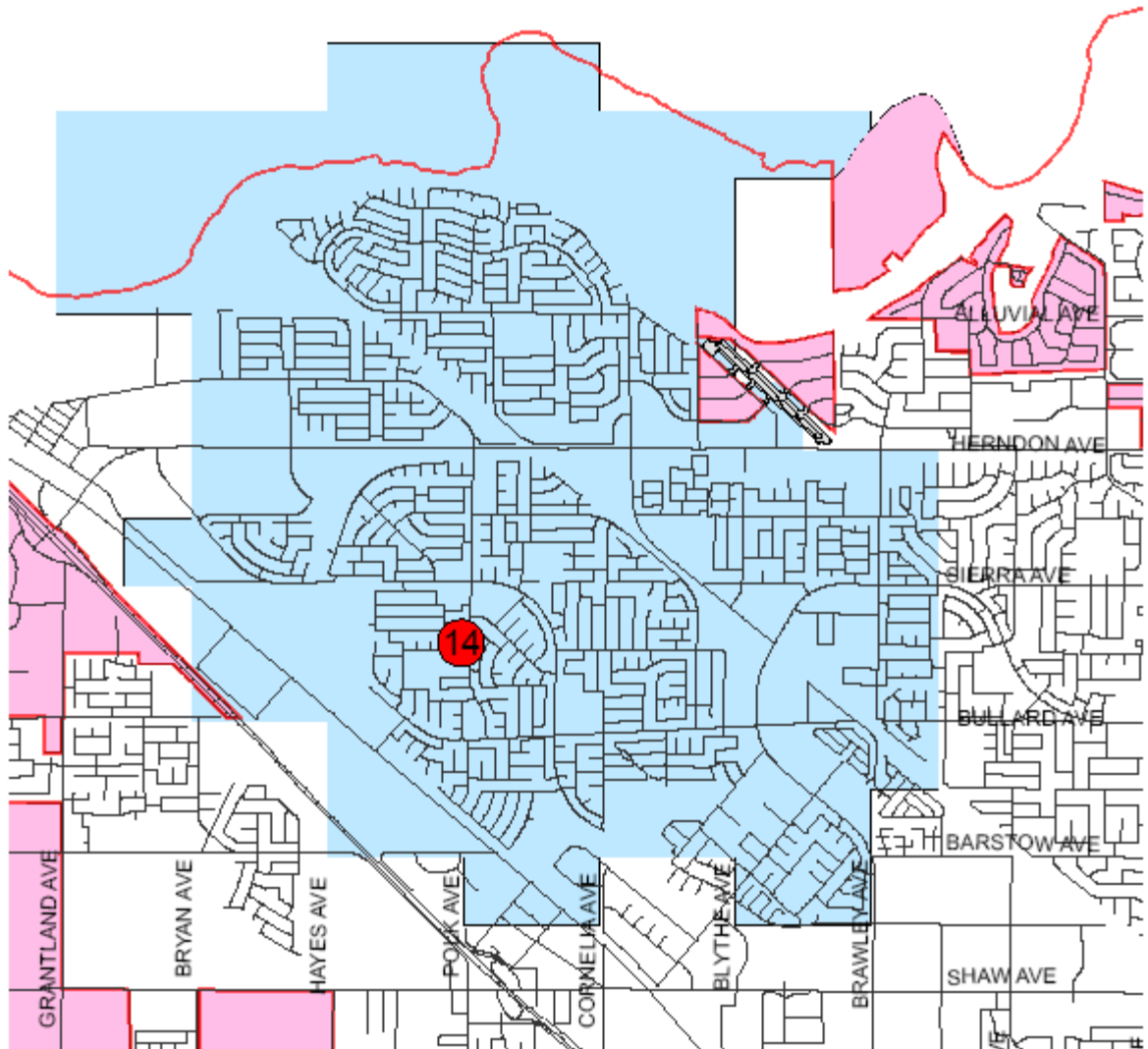
Percent of time first-due unit arrived 4 minutes or less: **23.08 percent**

Percentage of time balance of the first-alarm assignment arrived in eight
minutes or less: **88.66 percent**

Average response time for first-alarm units: **5 minutes 46 seconds**

Fresno City Fire Department Station 14 Response Area

- City Limits
- Response Area
- North Central Fire



Station No. 15 – 5630 East Park Circle Drive

Apparatus

Staffed Units: Engine (3)

Additional Equipment Housed: Reserve truck, support vehicle (bus)

Workload Indicators

Suppression: 392 Percentage of Calls: 34 percent

EMS: 773 Percentage of Calls: 66 percent

Engine: 296 (Station Opened 11/05)

Total Calls: 1,165

Total inspectable occupancies: 149

Total hydrants: 820

Public education events: 1

Notable Statistics

Fire loss for first-in area: \$820,950

Average fire loss per incident: \$2,094

Service Level Objectives

Percentage of time company met turnout time of 60 seconds or less between 0700 – 2159 hours: **49.04 percent**

Percentage of time company met turnout time of 90 seconds or less between 2200 – 0659 hours: **63.64 percent**




Average response time for first-due unit: **5 minutes 27 seconds**

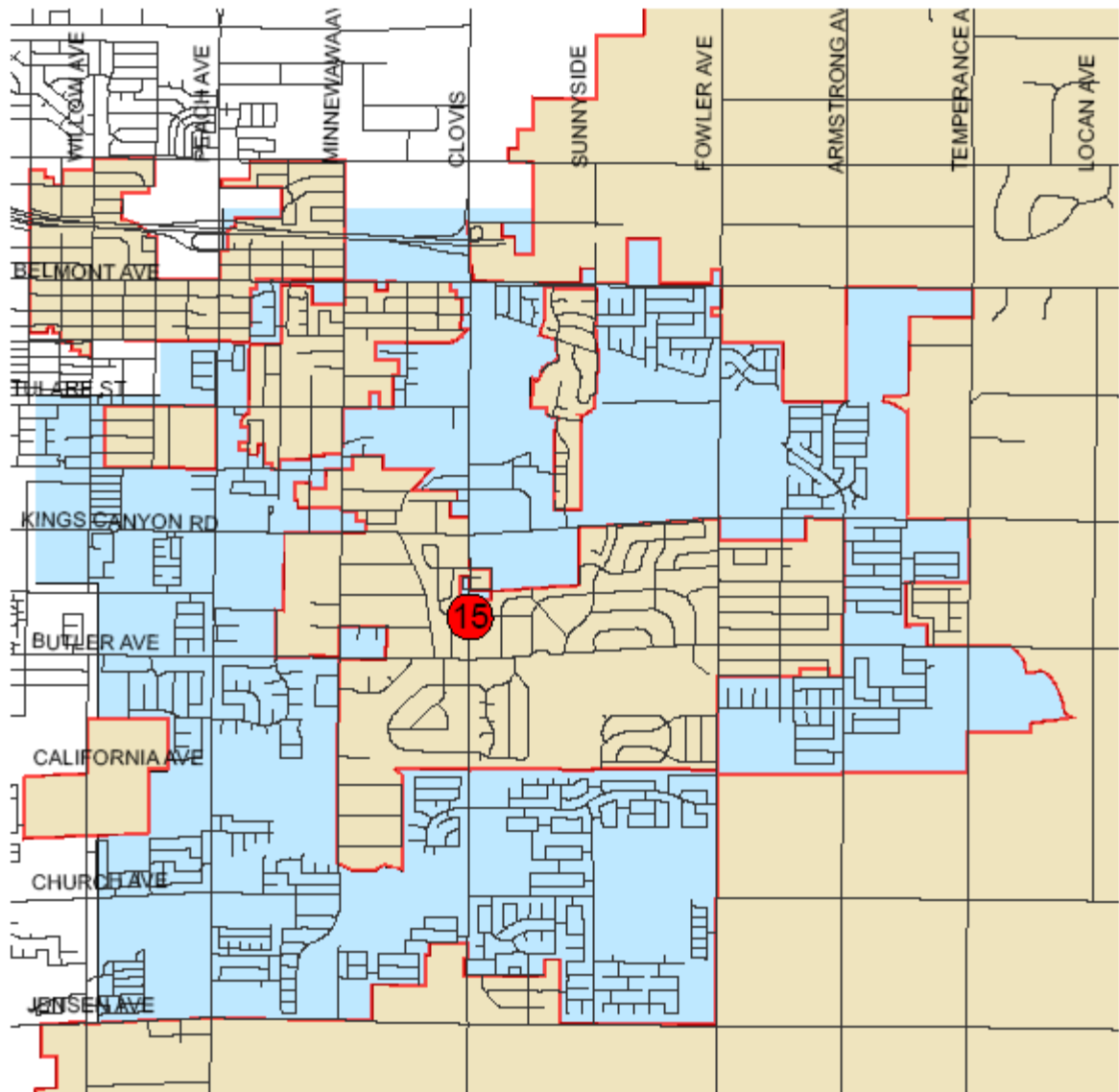
Percent of time first-due unit arrived 4 minutes or less: **20.20 percent**

Percentage of time balance of the first-alarm assignment arrived in eight minutes or less: **88.82 percent**

Average response time for first-alarm units: **5 minutes 46 seconds**

Fresno City Fire Department Station 15 Response Area

-  City Limits
-  Response Area
-  Fresno County Fire



Station No. 16 – 4170 North Brix

Apparatus

Staffed Units: Engine (3)
Additional Equipment Housed:

Workload Indicators

Suppression: 405 Percentage of Calls: 40 percent
EMS: 612 Percentage of Calls: 60 percent
Engine: 1,210
Total Calls: 1,017
Total inspectable occupancies: 376
Total hydrants: 595
Public education events: 5

Notable Statistics

Fire loss for first-in area: \$621,700
Average fire loss per incident: \$1,535

Service Level Objectives

Percentage of time company met turnout time of 60 seconds or less between 0700 – 2159 hours: **33.99 percent**

Percentage of time company met turnout time of 90 seconds or less between 2200 – 0659 hours: **23.01 percent**

Average response time for first-due unit: **5 minutes 43 seconds**

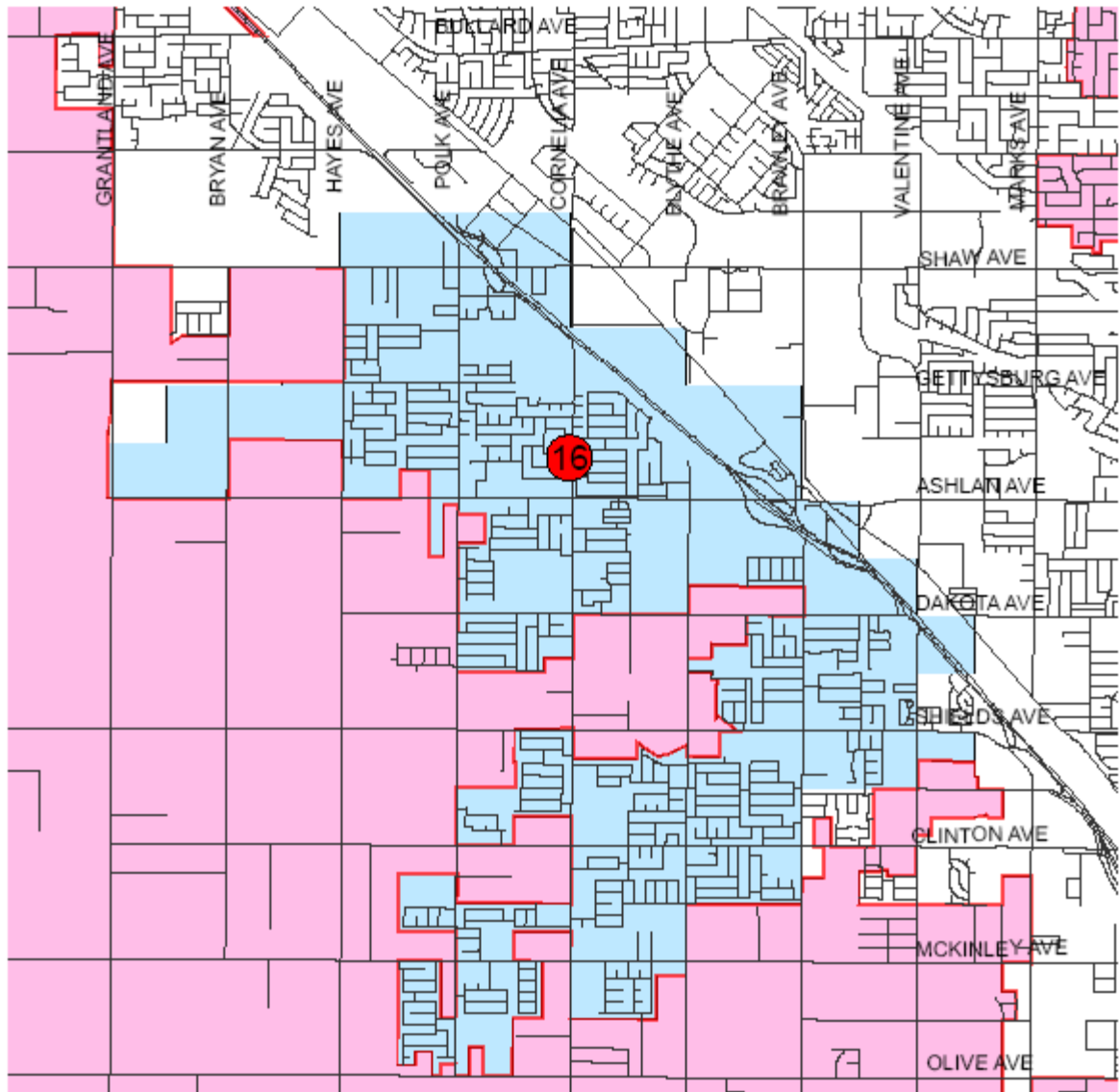
Percent of time first-due unit arrived 4 minutes or less: **22.53 percent**

Percentage of time balance of the first-alarm assignment arrived in eight minutes or less: **82.42 percent**

Average response time for first-alarm units: **6 minutes 7 seconds**

Fresno City Fire Department Station 16 Response Area

- City Limits
- Response Area
- North Central Fire



Station No. 17 – 10512 North Maple

Apparatus

Staffed Units: Engine (3)
Additional Equipment Housed:

Workload Indicators

Suppression: 129 Percentage of Calls: 44 percent
EMS: 163 Percentage of Calls: 56 percent
Engine: 502 (includes Engine 21)
Total Calls: 292
Total inspectable occupancies: 198
Total hydrants: 524
Public education events: 8

Notable Statistics

Fire loss for first-in area: \$152,600
Average fire loss per incident: \$1,183

Service Level Objectives

Percentage of time company met turnout time of 60 seconds or less
between 0700 – 2159 hours: **15.69 percent**

Percentage of time company met turnout time of 90 seconds or less
between 2200 – 0659 hours: **18.18 percent**

Average response time for first-due unit: **5 minutes 29 seconds**

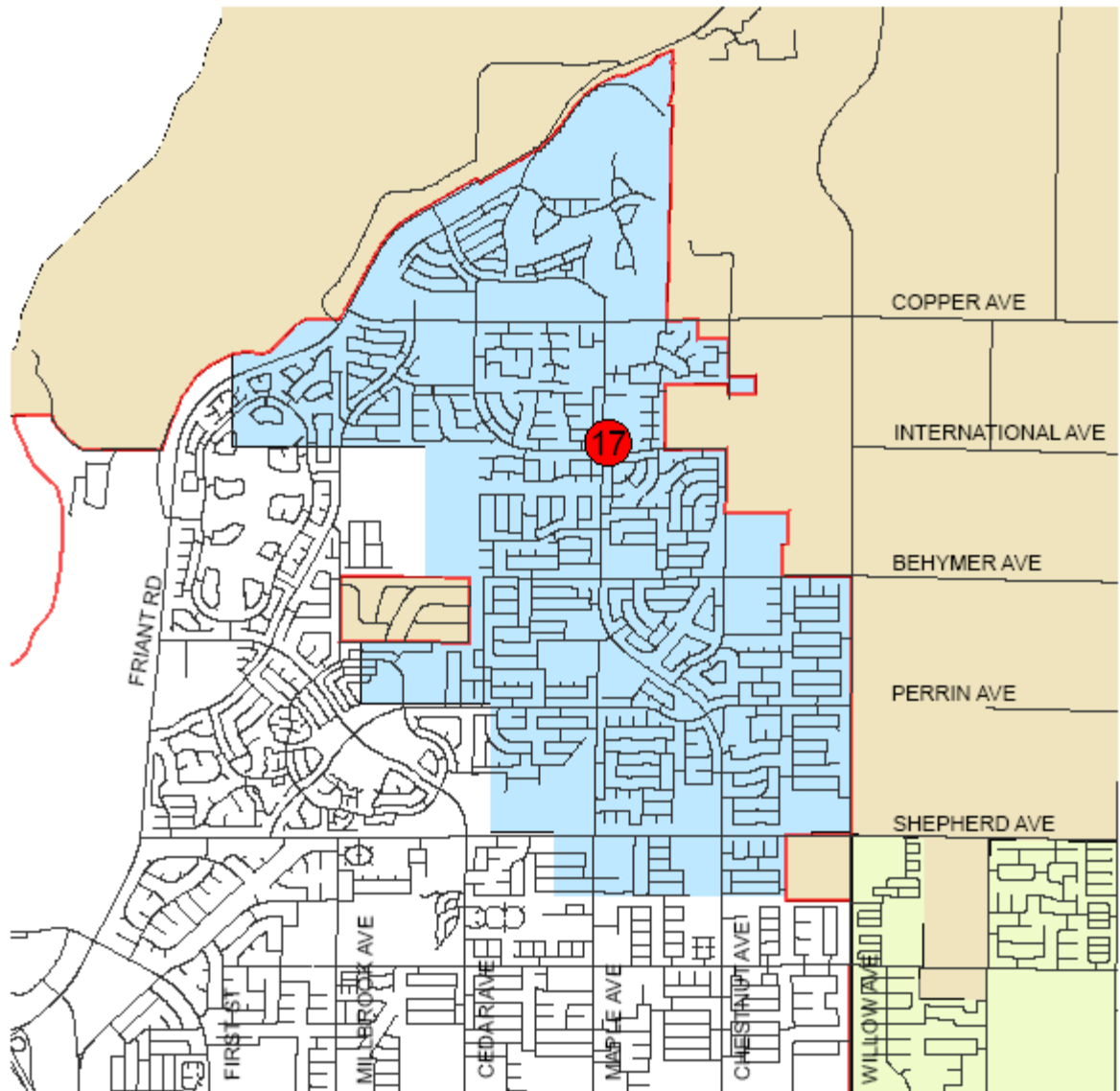
Percent of time first-due unit arrived 4 minutes or less: **23.96 percent**

Percentage of time balance of the first-alarm assignment arrived in eight
minutes or less: **83.48 percent**

Average response time for first-alarm units: **6 minutes 17 seconds**

Fresno City Fire Department Station 17 Response Area

- City Limits
- Response Area
- Fresno County Fire
- City of Clovis



Response Area being re-configured to reflect new streets in the area of Station 17.

Station No. 18 – 5938 North La Ventana

Apparatus

Staffed Units: Engine (3)
Additional Equipment Housed:

Workload Indicators

Suppression: 41 Percentage of Calls: 52 percent
EMS: 38 Percentage of Calls: 48 percent
Engine: 0
Total Calls: 79
Total inspectable occupancies: 33
Total hydrants: 133
Public education events: 0

Notable Statistics

Fire loss for first-in area: \$11,300
Average fire loss per incident: \$276

Service Level Objectives

Percentage of time company met turnout time of 60 seconds or less
between 0700 – 2159 hours: **17.50 percent**

Percentage of time company met turnout time of 90 seconds or less
between 2200 – 0659 hours: **20.00 percent**

Average response time for first-due unit: **7 minutes 2 minutes**

Percent of time first-due unit arrived 4 minutes or less: **2.13 percent**

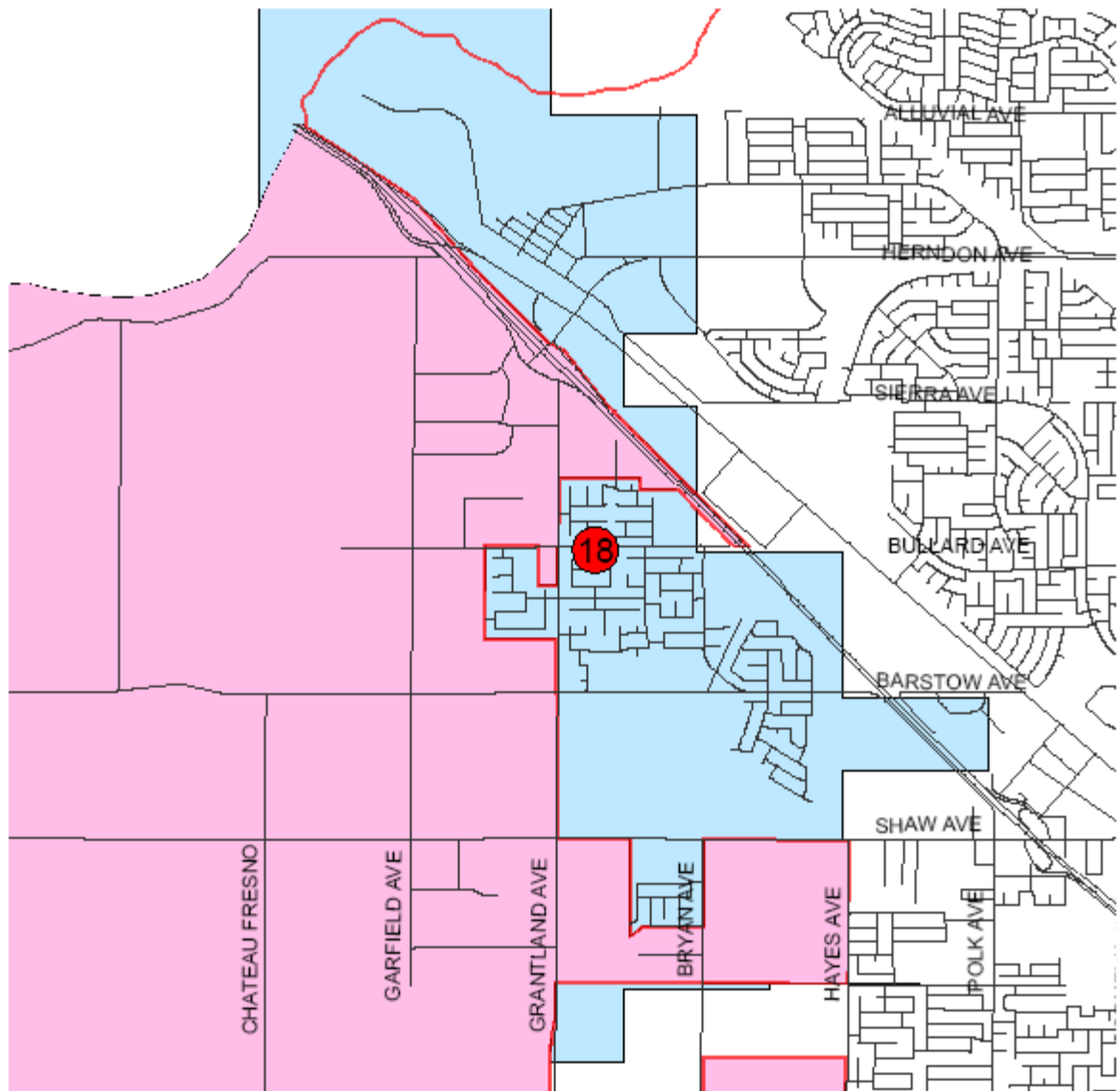
Percentage of time balance of the first-alarm assignment arrived in eight
minutes or less: **74.47 percent**

Average response time for first-alarm units: **7 minutes 11 seconds**

Note: Station opened in January 2006

Fresno City Fire Department Station 18 Response Area

- City Limits
- Response Area
- North Central Fire



Station No. 20 – 4537 North Wishon

Apparatus

Staffed Units: Engine (3), battalion chief (3)
Additional Equipment Housed:

Workload Indicators

Suppression: 197 Percentage of Calls: 39 percent
EMS: 304 Percentage of Calls: 61 percent
Engine: 0
Battalion chief: 0
Total Calls: 501
Total inspectable occupancies: 436
Total hydrants: 496
Public education events: 0

Notable Statistics

Fire loss for first-in area: \$123,460
Average fire loss per incident: \$627

Service Level Objectives

Percentage of time company met turnout time of 60 seconds or less
between 0700 – 2159 hours: **51.80 percent**

Percentage of time company met turnout time of 90 seconds or less
between 2200 – 0659 hours: **28.33 percent**

Average response time for first-due unit: **4 minutes 57 seconds**

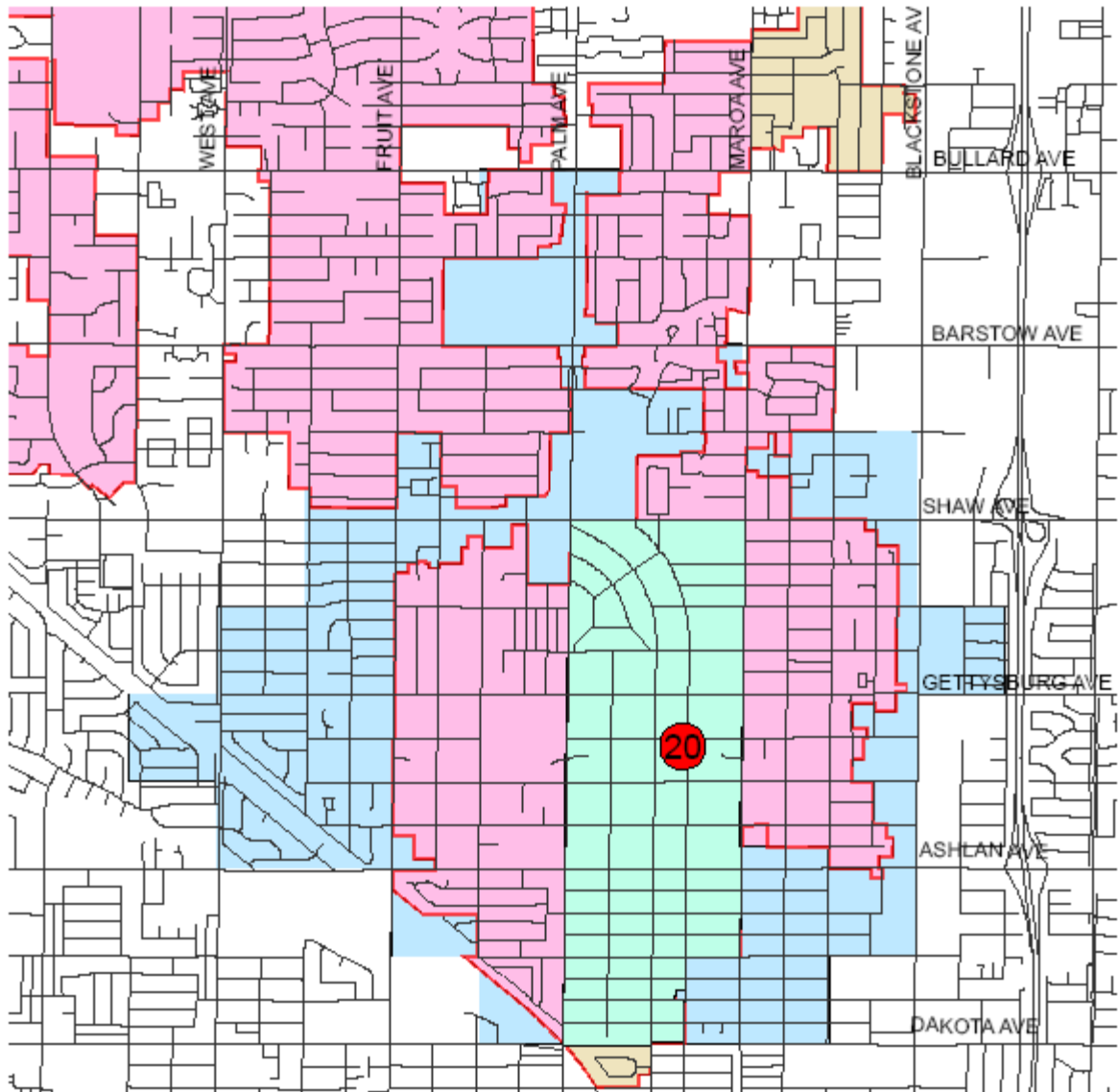
Percent of time first-due unit arrived 4 minutes or less: **25.65 percent**

Percentage of time balance of the first-alarm assignment arrived in eight
minutes or less: **92.67 percent**

Average response time for first-alarm units: **5 minutes 7 seconds**

Fresno City Fire Department Station 20 Response Area

- City Limits
- Response Area
- Fig Garden
- North Central Fire
- Fresno County Fire



ARFF Station – 5065 East Anderson

Apparatus

Staffed Units: Two air rescue vehicles
Additional Equipment Housed:

Workload Indicators

Aircraft: 4	Percentage of Calls: 25 percent
Suppression: 6	Percentage of Calls: 37.5 percent
EMS: 6	Percentage of Calls: 37.5 percent
Air Rescue 2: 16	
Air Rescue 4: 16	
Total Calls: 16	
Total inspectable occupancies: 0	
Total hydrants: 30	
Public education events: 0	

Notable Statistics

Fire loss for first-in area: NA
Average fire loss per incident: NA

Service Level Objectives

Percentage of time company met turnout time of 60 seconds or less between 0700 – 2159 hours: **86.90 percent**

Percentage of time company met turnout time of 90 seconds or less between 2200 – 0659 hours: **100.00 percent**

Average response time for first-due unit: **2 minutes 12 seconds**

Percent of time first-due unit arrived 4 minutes or less: **76.90 percent**

Percentage of time balance of the first-alarm assignment arrived in eight minutes or less: **92.31 percent**

Average response time for first-alarm units: **2 minutes 12 seconds**